MEETING

STATE OF CALIFORNIA

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

GREEN RIBBON SCIENCE PANEL

CalEPA HEADQUARTERS BUILDING

KLAMATH ROOM, SECOND FLOOR

1001 I STREET

SACRAMENTO, CALIFORNIA

TUESDAY, FEBRUARY 13, 2018

8:44 A.M.

APPEARANCES

PANEL MEMBERS PRESENT

Arthur Fong, Ph.D., Co-Chair

Kelly D. Moran, Ph.D., Co-Chair

Elaine Cohen-Hubal, Ph.D.

Ann Blake, Ph.D.

Jack Linard, Ph.D.

Kenneth Geiser, Ph.D.

Michael Caringello, MBA

Julie M. Schoenung, Ph.D.

Helen Holder

Rebecca Sutton, Ph.D.

Mark Nicas, Ph.D.

DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC)

Marcus Simpson

Meredith Williams, Ph.D., SPWP Deputy Director

Karl Palmer, SPWP Branch Chief

Robert Brushia, Ph.D.

I n d e x

P R O C E E D I N G S

8:44 A.M.

MR. SIMPSON: Good morning, folks, and thank you for joining us today. My name is Marcus Simpson, and I work with DTSC's Office of Public Participation, and on behalf of the Department, I want to extend a warm welcome to everyone.

I also want to say welcome back to the panel members. Thank you for being here again. We hope you all had an excellent and restful night. I know we had a lot of lively and productive discussion yesterday, and we're hoping for much the same today.

So, if you are just joining us today for the first time, and you weren't here yesterday, I'd like to ask if you could please take a glance to the back of the room and find the exits. In the event that we have a fire alarm or any other reason that we need to quickly evacuate, those will be where we head for.

I would ask that everyone please grab your valuables and, as safely and as orderly as possible, just head for those exits. When you make it outside of the room, please do not use the elevators. Rather, let's take the stairways. Thank you.

Before we get underway with panel discussion and presentations today, just a couple of quick housekeeping announcements. I'd ask that you please bear with me. The restrooms are located just outside the room, in the main

hallway. The water fountains are also located there. We also have additional restrooms on the second floor, just across the bridge and the breezeway, just past the Byron Sher Auditorium.

So I want to let you guys know that today's discussion is subject to the Bagley-Keene Open Meeting Act. We want to maintain public transparency and access to the discussion.

In addition to those of us here present in the room today, we are broadcasting this meeting via the Web. For those of you that may be tuning in from your offices or your home, welcome. Thank you for joining us.

Throughout the course of the day, if you have any input you'd like to provide, we would ask that you please e-mail saferconsumerproducts@dtsc.ca.gov. Once again, saferconsumerproducts@dtsc.ca.gov.

We have a court reporter here taking a transcript of today's discussion, and once it's prepared for DTSC, we will make it available on our web site.

So I appreciate your attention. Thank you for bearing with me. If there's anything that I can do to help today's event turn out that much better, to provide information, if you have questions, please don't hesitate to grab my attention and let me know. Okay? So thank you much. I'd like to turn it over to our co-Chairs, Kelly and

Art, and have a good one. Thank you very much for your help.

PANEL CO-CHAIR FONG: Good morning, panel members. I though we just had a really productive day yesterday, and when I spoke to the staff members afterwards, they told me that, you know, your comments were really informative and insightful, and so thank you very much for sharing your experience and expertise.

Today we'll start the meeting with a presentation from Rob on the development of the 2018-to-2020 Priority Product Work Plan, after which the panel will be given the opportunity to ask clarifying questions, and that will be followed by a public comment today on today's agenda, after which we'll switch gears and -- I'm sorry.

We'll have a panel discussion on the Work Plan. Then we'll switch gears and close today's hearing with a panel discussion on how DTSC can engage the research community on research topics that address specific program and state code leads.

And, Kelly, do you have any -- Meredith.

DEPUTY DIRECTOR WILLIAMS: Good morning. Well, I want to just echo what -- thank you. I want to echo what Art said, which is simply that, as I've talked to staff, and my observations throughout the day, it's clear that the input you provided yesterday was very much "Goldilocks." It

was just right.

It was not too abstract, so that we didn't know how to take it and put it in the context of what we're trying to do. It was not too "down in the weeds" so that, you know, we were just spinning around some little piece of what we're trying to do and not looking at the big picture.

It had a breadth to it, and, as a result, I think lots of us said, "Okay. That's a to-do," and there was a direct translation from the input you provided to what we can do to continue to implement the regulations. So we were very pleased with yesterday's session, and look forward to today's discussion of the Work Plan and the future. Thank you.

PANEL CO-CHAIR FONG: Thank you very much.

Now Rob is going to give us a presentation on the development of the 2018-to-2020 Priority Product Work Plan.

Rob.

MR. BRUSHIA: Thank you, and good morning once again, and thank you all for joining us.

It is my pleasure to be able to introduce to you the 2018-to-2020 Priority Product Work Plan, because we have been working very hard on it the last few months, and we're eager to get it done, and out for public comment and review, and last week we did make it publicly available via our CalSAFER web site.

There's a public comment period that has begun. It's going to run into March. I'm going to have a little bit more detail later on in the meeting on how the public can participate and provide comment to us, and I believe all of you received a copy of it last week. So, hopefully, you've had a chance to go over it because, in 10 minutes, I can't really delve too deep into it. What I'm going to try to do is give you an overview of the Work Plan, and then try to summarize for you how this Work Plan differs from our last Work Plan.

Okay. So just a refresher. What is the Work Plan? The Work Plan is a document that basically describes all the product categories we are going to evaluate over the next three years.

The Safer Consumer Product regulations require us to prepare a Work Plan every three years. It sets forth these product categories, and we will evaluate those product categories to identify product-chemical combinations are potential priority products.

Okay. The work plan also explains the policy priorities we relied upon in selecting product categories for the Work Plan, and gives a general explanation of how we selected the product categories.

What it doesn't do is, it does not name specific product-chemical combinations, and it does not create any

legal obligations for any stakeholders. It is simply a document that frames our decision making for priority product selection. Okay.

So our approach in developing this work plan was to engage a number of stakeholders. We had a public comment period last fall, and we received quite a few comments. We also actively engaged various other state agencies, boards, departments, and offices, as well as the U.S. EPA.

We also used our discretion to develop some program goals, and then to develop some policy statements that support those program goals, and I'm going to go over those in just a minute with you, and then we also looked at, you know, the work we had been doing in our last Work Plan, and what we wanted to continue on with out of that Work Plan. Okay.

So, as I just mentioned, we used our discretion to develop some policy statements and some policy goals, and the goals are actually highlighted here in green, and they were to protect children, to protect our valuable and limited water resources and aquatic ecosystems, to address chemicals in our indoor environment, and to address chemicals that may migrate into food from food packaging.

We then, after developing those goals, developed the policy statement shown here, and there's more detail on each of these in the Work Plan itself, but we developed

these policy statements, and all the product categories that we selected in this work plan that we proposed, including this work plan, are supported by these policy statements.

Okay. So now I'm going to describe to you how -- I'm going to describe to you the new product categories that we propose, including in the new Work Plan, and how they differ from our 2015-2017 Work Plan. Okay.

This slide shows the product categories that were in our 2015-2017 Work Plan. Okay. We plan to retain some of these, but we also propose eliminating two, and they are fishing and angling equipment and clothing. We may revisit them in the future, but, for now, we don't intend to put those in new Work Plan. Okay.

This next slide I'm going to spend several minutes on, and I'm going to describe to you the product categories that we retained, or that we propose retaining, from the old Work Plan, as well as the new product categories that we described for this Work Plan.

The first one I'm going to talk about are shown here, the beauty, personal care, and hygiene products, and clothing. These product categories would be retained, and named exactly as they were in the previous work plan. The only thing that would change with respect to these is, we chose to revise the product category descriptions -- drink of water, real quick, my throat -- okay.

We chose to revise the descriptions for these product categories because we wanted to enhance clarity regarding what might be included in these particular product categories, but the scope, also, we don't believe is changing. Okay. So these product categories would be very similar to what was in the last Work Plan.

The next three were also from the last Work Plan, but for these, we decided to change both the name of the category as well as the product description and the scope of the category. So, in the case of furnishings, I don't know if folks can -- folks on the webcast probably can't see this, but, "Furnishings," there's a picture of a chair. In the case of this category, the old category in the 2015-2017 Work Plan was called "Household, Office Furniture, and Furnishings," and where we got that name from was the Global Product Classification System.

In our experience, implementing the last Work Plan, we learned that that classification system isn't really the best fit for our product categories, and so we decided to move way from it. We decided to revise the name and the description -- you can read more detail about it in the Work Plan -- and then, again, we decided to change the scope of this category as well.

In the old work plan, this product category was limited to only furnishings that contain flame retardants or

stain-resistant chemicals, and we propose removing that restriction, and the reason that we are making that proposal is because, again, during our experience implementing the last Work Plan, we learned about some other chemicals that may also present a potential for exposures in the indoor environment, and we'd like the ability to address those, you know, to further evaluate those chemicals, and potentially address them as well.

Another thing that we did is, we added the term "décor" into the name of this category, and we also added the term "school." We just wanted to emphasize that we're talking about furnishings in all structures that basically are intended to human habitation, and we added the word "décor" because we wanted to emphasize also that certain product categories that we might not typically think of as furnishings, such as curtains, for example, are actually included in this category. Okay.

Now, regarding building materials, which is shown right here with the paintbrush, that category in the old Work Plan was simply called "Building Products," and the category was restricted to paint products, adhesives, sealants, and floorings.

Again, we propose changing the name to the name that you see here on the slide, and we also propose removing that restriction. We propose the revision to the name and

the product category description just, again, to enhance clarity, so that we hope we provide a better description of what it is we're talking about looking at, but, in removing the scope, the reason that we're doing that is because we know that there's a tremendous amount of effort in this sector in terms of looking for greener alternatives, and we want to explore what we can do to encourage the development and use of those alternatives in a wide variety of products that might fit within this category. Okay.

For office supplies, in the old Work Plan, this was called "Office Machinery and Consumables," and it was a bit confusing because we really didn't intend, I don't think, to address just machinery. In fact, we didn't intend to address machinery at all. We really wanted to address consumable office products.

So, again, we decided to revise the name, as shown here on the slide. Again, we added the term "school," because we wanted to specify that this -- you know, some of these consumables are also used in schools, by children. Okay.

We learned from our work on the last Work Plan that the -- excuse me, I'm sorry -- that the old name really didn't capture adequately all the categories that we were interested in evaluating, and that's again why we decided to change the name and the product description.

Okay. Let's move on. Okay. And, finally, two more categories. Both of these categories will be new categories for this Work Plan.

"Food Packaging" we proposed including because we received an awful lot of stakeholder recommendations and requests to include that, and, in fact, in 2016, we received a petition asking us to address bisphenol A in food cans, and, while we were unable to grant the petition, in looking at issues related to food packaging, we became aware of potential exposures to a number of chemicals from food packaging, and so we thought it would be a good area for us to look at, and there also recently has been talk of legal action to address perfluoroalkyl substances in food packaging. So we think this is an appropriate category for the food -- for the food -- for the Work Plan.

"Lead-Acid Batteries" is the last category I want to mention. This is a special category. This category was actually added to our Work Plan by act of our legislature, and it was actually added to our last Work Plan, and, in fact, we began working on it last year. There's been a considerable amount of work done, and we had a stakeholder -- or a public workshop -- this last year as well, and so we haven't finished that work yet. We want to continue on with it, and, therefore, we are going to include it in the new Work Plan. Okay.

So the next slide just gives a brief summary, "Beauty, Personal Care, and Hygiene Products," and the "Cleaning Products" category are not shown, because, again, we're not changing the names from the old Work Plan, and we don't believe that we're changing the scope, even though we've revised the category descriptions a little bit. So all I'm showing here are those that are going to change, and how.

The first three here, this is the -- in the center column, it shows the name in the old Work Plan, shows how we're proposing changing the name, and, in fact, the product description and name changes would indeed change the scope of the category, and then I just in "Food Packaging" and "Lead-Acid Batteries" because those are completely new categories.

Okay. So, in closing, I have a couple more slides. Okay. We are really looking forward to beginning a dialog with you, and the public as well. We are really hopeful that we're going to get a lot of good input from our public comment period that's open right now. We have specific questions that we are going to propose to you, and I'm going to put those up on the board in just a minute, and we're eager for your feedback.

In terms of engaging the public, as I mentioned, we have this comment period running through March 9th. It's

currently open on our CalSAFER web site. We also are planning a workshop here in this building, in the Sierra Hearing Room, on February 26. More information on both of those topics can be found at this link that I've given here.

Then I just wanted to also say that, as we move forward implementing this plan, we learned much in implementing our last plan. We have moved forward quite a bit, and we relied on many of the lessons that we learned in creating this work plan, and we hope to continue to apply those lessons that we've learned as we move forward in adopting and implementing this Work Plan.

One more slide before I get to the questions. Here's my contact information, in case anybody wants to contact me with any questions. You can also find me on DTSC's public web site, under the staff directory. I'll leave that up for just a second so, if anybody wants to copy any of the information, they can. Okay.

Then, finally, here are the questions that we propose for you, the Science Panel. We would like to know -- we are especially interested, actually, in receiving feedback on our product category descriptions, and whether or not we've gone a good job in revising them. So we're interested in whether or not the product categories are clearly and sufficient defined and aligned with our stated policy objectives.

We would like to know what priorities, including specific hazard endpoints, chemicals, and so forth we should pursue. We want to know what you think about any anticipated challenges we might face in identifying the specific products within the categories we've identified.

We would like to know if you anticipate any data gaps that we might encounter, or anticipate any information needs associated with the product categories, and whether or not you have any recommendations for closing those data gaps, and then we would like to know if there are prioritization methodologies that we may not be aware of, or rubrics that we may apply to our implementation of the Work Plan. And that's it.

PANEL CO-CHAIR FONG: Thank you.

At this time, are there any clarifying questions for Rob on the presentation? Just as a reminder, this question-and-answer period, it's for asking questions related to the slides and the presentation. So, if there are, you know, questions that's more suited for panel discussion, it would be better to wait until then.

Questions for Rob? Yes, Elaine.

PANEL MEMBER COHEN-HUBAL: So just one quick question, and, again, me not knowing enough about the program, the two years, it's a two-year Work Plan? And is that part of the regs, that you have a two-year Work Plan?

MR. BRUSHIA: It's a three-year work plan.

PANEL MEMBER COHEN-HUBAL: Three-year Work Plan.

MR. BRUSHIA: This would go -- it would be 2018, 2019, and 2020. It would end at the end of 2020.

PANEL MEMBER COHEN-HUBAL: Okay. And your year runs -- when does your year start? Does it start --

PANEL MEMBER SUTTON: You know, that wasn't specified in the regulations, and so the last one we issued in April. So our target is to get this one in place by April.

PANEL MEMBER COHEN-HUBAL: And then you'd have until April of 2020. So it's three years. Okay. Thanks. Can't do math.

PANEL CO-CHAIR FONG: It's Ann.

PANEL MEMBER BLAKE: So a clarification question. It's not listed in your policy priorities, which you've called "labor" and "worker exposure" in a couple of these. I'm just kind of wondering where that sits as a policy priority, or is that a question you'd like us to answer on the prioritization methodologies?

MR. BRUSHIA: Well, no. It's one of the -- in the regulations, it allows us to consider -- as we're prioritizing products and evaluating products, it allows us to look at sensitive subpopulations, and so they would fall within that category, and we are not meaning to imply that

we're not going to look at that. In fact, in some cases, that may be a primary area of concern, when we get into actually evaluating products. But we won't know that until we actually start doing the work, so it's something that we certainly would look at.

PANEL CO-CHAIR FONG: I have Jack, Ken, and then Mike. Jack.

PANEL MEMBER LINARD: I have a question about the old Work Plan. Is that now sunsetted, or, once this is approved, what happens to textiles and -- not going to work on it, or is there work that you 've started that you'll finish up?

MR. BRUSHIA: Do you want to answer it, Meredith?

DEPUTY DIRECTOR WILLIAMS: It's sunsetted, quite simply. We won't put any resources into those categories.

PANEL MEMBER LINARD: I just wanted to clarify that.

DEPUTY DIRECTOR WILLIAMS: Yes, and Rob did mention that, you know, it could be that we go back and put it in a future work plan, but that's not what we're --

PANEL MEMBER LINARD: Okay.

PANEL CO-CHAIR FONG: Thank you.

Ken?

PANEL MEMBER GEISER: Bob, thank you for a fine presentation. I have a concern about one area, but I'm

going to prefigure it by asking a question, which is, on your building products and construction and renovation, in construction and renovation, does that include structural elements as well, meaning external paneling, beams, and concrete foundations, and stuff like that?

I mean, the words suggest construction materials or construction, but can you clarify what you think the agenda is going to be there? Thank you.

MR. BRUSHIA: I don't know that I can clarify the agenda, because we haven't done the work yet. I would say that anything that is used in the construction of a building that you might think of might be included. What we intend to focus on I can't say yet, because we haven't started implementing the Work Plan. We haven't done the work.

So, Meredith, did you have any additional -- or, Karl, did you have any additional --

BRANCH CHIEF PALMER: I was going to say that we're always keeping in mind the key criteria in the regs, which are "Is there exposure, and does that exposure have the potential for significant or widespread impact?"

So there's sort of a logical filter that we would put things through, so beams, that don't have as much potential for exposure as something as maybe a countertop or wallboard or other things, you know, are kind of probably be lower in the queue, but it really is driven by the

information we get, and then it's an inductive process. So, while everything is on the menu, so to speak, there's certainly things that would not be as high priority.

MR. BRUSHIA: The other thing is that our policy statements, one of the key ones was addressing chemicals in the indoor environment, and so we would be most interested in products that have that kind of an impact.

PANEL CO-CHAIR FONG: Mike.

PANEL MEMBER CARINGELLO: Rob, you stated one of your problems up front is, how do you cover all this in 10 minutes, and you did a really good job with the presentation doing that. So thank you.

A question I have, and it's just because my memory is not always great, is I liked how you showed us the transition with the products, the categories. How significantly did the policies, the stated policies, change? And I know that they're still within the overall scope of the regulation, but there are certain pieces that you pick out in the Work Plan and say, "Here's what we're going to stress." How did those change between the two Work Plans?

MR. BRUSHIA: You know, that's a very good question, and I'm now actually kind of sorry I didn't make a slide comparing those. In the old Work Plan, we had six categories, first of all, and not just four, and I cant' remember what they all -- policy priorities, I'm

sorry -- instead of just the four, and I can't recall what they all were, exactly.

DEPUTY DIRECTOR WILLIAMS: So a couple things changed. On the last set of policy priorities, they weren't actually all policy. So, for instance, some of them were key data sources that we wanted to look at, like biomonitoring data.

So, number one, we really focused on what is policy, and then I'd say the other thing that changed was the way we described those policy priorities. So, for instance, when we talk about children, we talk about hazard endpoints that are especially important for children in a way that we didn't do the last time around.

So, really, again, part of the intent of the Work Plan is to send some signals and to try to give people some light on how we're going to make our decisions, and so we're trying to flesh out, you know, what would be the natural things you would think about when we state a policy priority.

So we did drop workers as a policy priority, but, again, that's largely because it's so ingrained in the structure. We didn't think that we needed particular policy statements around that. The indoor air and the biomonitoring data were data sources, so we don't reference those anymore. They're still important to us, given some of

the other things, but really tried to clean it up a little.

PANEL MEMBER CARINGELLO: Okay. Thank you.

PANEL CO-CHAIR FONG: Julie.

PANEL MEMBER SCHOENUNG: Thank you, Rob. Nice summary, as Ken said, of a long document. My question is, you explained why you modified the description of several of these categories, but you didn't really elaborate on why you dropped the two that you dropped. Are there lessons learned there, or particular reasons why those two categories were taken out, that give us a frame of reference for the ones that stayed?

MR. BRUSHIA: Indeed there are.

Karl, do you want to chime in on this one?

BRANCH CHIEF PALMER: Well, first let's talk about clothing. That's actually a really interesting category, and there's a lot of issues in the supply chains for clothing, but one of the challenges there, we found, was that those are incredibly complex supply chains, and a lot of our concerns actually, or at least the weight of them, might be more at the manufacturing of the textile than the actual garment, and the structure of our regulations is to focus on specific products.

So that would have made it pretty tricky, to figure out where that sweet spot might be of value, in terms of a huge investment of work to get to the right spot. So

it's not to say we won't look at it somewhere down the line, but it was a very broad category, and so we should have said, "Leave it off this time."

As far as fishing and angling equipment, that one, I think -- by the way, that was the category which we had the most input in, in the last Work Plan, and I'm sorry that the California Sports Fishing Alliance is not here today, but I think part of the reason -- that one was pretty straightforward. Our focus was on small lead weights that were used in fishing and angling that were ingested by waterfowl. We feel there's extremely strong data to show that that's a problem.

We also feel that there's extremely obvious alternatives out there that are on the market right now that, in some sense, our investment of going through the whole regulatory AA process probably wasn't worth it, because at least Karl Palmer's feeling is, you can go to Cabela's or Bass Pro Shops and find a good alternative today.

So that might be something for a different organization to look at in terms of encouraging the use of safer alternatives, as opposed to our valuable resources that have some bigger challenges. So it was sort of a no-brainer.

DEPUTY DIRECTOR WILLIAMS: I would say that, if we

had endless resources, we wouldn't have dropped it. Right? It was a very large stakeholder community, and in terms of incentivizing innovation and things like that, we weren't going to do that. I mean, our regulations weren't going to do that. But Karl and I are both avid birders --

BRANCH CHIEF PALMER: And anglers.

DEPUTY DIRECTOR WILLIAMS: -- and Rob is a sport fisherman, and we feel pretty passionately about that issue.

MR. BRUSHIA: And I do not use lead fishing weights. Let's confirm that out here.

PANEL CO-CHAIR FONG: Jack, do you have another question?

PANEL MEMBER LINARD: One more comment. On one of your first slides, you talked about stakeholders. Two of your categories aren't covered by your stakeholders, and that's obviously beauty and personal care and hygiene products, but also food-contact packaging. Those are FDA and USDA, and there are food-contact regulations.

I would just hope that you're planning on contacting both of those agencies and developing -- so that they get on the list, it's not just EPA. And then we mentioned yesterday the Consumer Product Safety Commission, which actually is responsible for the safety of all other products, not FDA.

MR. BRUSHIA: Indeed. We are actually are

compelled by our regulations to consider other statutory and regulatory frameworks, and we will indeed be doing that. We don't intend, in implementing our regulations, to cause any kind of conflict with other existing laws and regulations, and, in a way, we have started that process already. We will, in fact, actively engage those folks.

We have here at the state level our Department of Public Health, which actually manages some programs that regulate cosmetics, for example, and so we feel we've started along that process to engage them, and we will do so, and we will be mindful of their existing purview, and not create conflict with it.

PANEL CO-CHAIR FONG: Ann, we have plenty of time.

PANEL MEMBER BLAKE: Okay. I think, just to add to the clarification for that, the food contact piece is probably not the piece that DTSC is going to be as concerned about, but the impacts on water, particularly, because some of the packaging materials we're thinking about -- I'm thinking about PFAS, which everyone is talking about these days.

So I'm speaking on behalf of -- feel free to kick me at any time, but, in my read of the regulations, you're asked to look at other relevant regulations, but it's also -- wow. It's actually spread around the table. Maybe I should stop at this point, but DTSC will look at the piece

that's relevant for human health and environment in California, and that will be separate from existing federal regulations.

DEPUTY DIRECTOR WILLIAMS: Right. We have to figure out whether we can enhance protection.

PANEL MEMBER BLAKE: Thank you.

DEPUTY DIRECTOR WILLIAMS: And so that's the language, and we have to look at where we think there isn't enough happening. I would only say that we're not limiting ourselves to the aquatic impacts.

Obviously, the ingestion piece is important, but there are a lot of different -- we were petitioned to list FDA and food-can linings, and in evaluating that petition, we did not grant that petition, but we learned a lot about, you know, that space, and recognize that there are some opportunities for us to meaningfully enhance protections.

PANEL MEMBER BLAKE: Thank you for clarifying that even further.

DEPUTY DIRECTOR WILLIAMS: And I would just remind folks that there is that petition process, and so there's the potential for us to add categories or add individual products based on a petition.

PANEL MEMBER BLAKE: Can you talk a little bit more about the petition process and how it's been used so far?

DEPUTY DIRECTOR WILLIAMS: Well, it's only been used twice. One was pretty much not compatible with the regulation. Somebody asked to remove a chemical or a set of chemicals, and we weren't even allowed to do that in a certain time frame. So that one was not really -- from the candidate chemicals list.

So you can add or remove candidate chemicals or priority products by amending the Work Plan, and so there's a petition process where the petitioner is asked to -- it's a pretty high bar. The petitioner is essentially asked to make the case for the potential for exposure and the potential for adverse impact, and also to address things like data gaps, presence of alternatives, things like that. Basically, everything that we do in our technical document we're asking the petitioner to do, so it is a very heavy lift. Nevertheless, that's what the regs call for.

Did that answer your question?

PANEL MEMBER BLAKE: Uh-huh.

PANEL CO-CHAIR FONG: Rob, thank you very much for your excellent overview of the Work Plan development.

Before we get into a panel discussion -- I'm sorry, Mike.

PANEL MEMBER CARINGELLO: I just want to be clear before we get into the -- could we click back to the policy slide? Because, with what Ann was saying, I don't disagree,

but, in looking at the policy slide, I think that the policy for the food-contact materials talked about --

MR. BRUSHIA: There it goes.

PANEL MEMBER CARINGELLO: The next one, yes. Yes. The words "Striving to protect California from chemicals that migrate into food from food packaging," if that's part of the policy, then DTSC isn't saying, "Well, we're really concerned about the aquatic environment solely from this," that they are indeed looking at the food as well?

DEPUTY DIRECTOR WILLIAMS: It's both. Right?

PANEL MEMBER CARINGELLO: Yes.

DEPUTY DIRECTOR WILLIAMS: California composts a lot, right? And so any chemicals that are problematic that are getting into the compost waste stream have the potential for aquatic impacts. Not only that, litter is a tremendous problem, and so chemicals are ending up in surface waters as a result of litter. So there are a lot of -- the exposure pathways are extensive.

BRANCH CHIEF PALMER: Can I just add one -- I just also want to add that three years can be a long time, and so these are just the priorities. It's not to say that something may (sic) come up in the interim that we didn't know about, that clearly should be a priority, and that we would take -- we're not taking anything off the menu here. We're just highlighting the ones that we're looking at

first.

PANEL CO-CHAIR FONG: Okay. Are there any more clarifying questions for Rob?

If not, again, thank you very much for just an excellent overview.

Before we get into the panel discussion on the Work Plan development, at this point on the agenda, I think we're to take public comments on today's agenda items. Marcus.

MR. SIMPSON: Thank you, Art, and also thank you, Rob, for a very informative presentation and discussion.

Before we transition to our public comment segment, I just want to issue a quick request, and encourage commenters to please limit comments to today's presentation and discussion. Thank you much.

For those on line, for our audience on line, just another reminder to please send comments to saferconsumerproducts@dtsc.ca.gov. If we receive comments from our on-line audience, we will read those comments following taking comments from the folks present here today in the room. Okay?

So, that said, do we have any public comments here in the room? Going once. All right. So, if anyone changes your mind in the next few minutes, my colleague, Diana Phelps, there in the rear of the room, she has comment

cards, as well as a microphone, if you'd like to stay to comment from your seat.

Okay. Art and Kelly, it doesn't look like we have any comments in the room.

Baoku, do we have any comments on line?

MR. HER: No.

MR. SIMPSON: All right. Thank you, folks. No comments in the room, Art. Thank you. All right.

PANEL CO-CHAIR FONG: Great. Excellent.

PANEL CO-CHAIR MORAN: Want me to take over?

PANEL CO-CHAIR FONG: Please.

PANEL CO-CHAIR MORAN: Okay. So, at this point, we'll start the panel discussion of the work plan. The staff have asked us five questions, if I can count right. Yes, that's five.

What I would -- although we have -- as we talked about yesterday, although we have quite an extensive period of time on the agenda, given the discussion yesterday, and interest in the research item, I'm thinking that we might want to wrap this discussion up more quickly, and give ourselves more time for research, but we will see how it goes.

So I'm going to suggest that we start with the first two questions: "Are the product categories clearly and sufficient defined and aligned?" and "What priorities,

including hazard endpoints, chemicals, chemical function, et cetera, should we pursue?" and go around once on that, and see if there's anything we need to discuss there, and then move to the next three questions that are more related to doing the research on identifying this potential specific product, chemical categories for regulation.

In the first part, if there's something important that isn't covered by one of these questions, I'd really appreciate it if panelists would please raise that at this time, and if there's anything you think that the group should be discussing, I want to raise that, too, at that time.

So our charge on reviewing the Work Plan -- they've asked us these five specific questions, but the legislature has asked us, very broadly, to make recommendations to the department about chemicals and, I think implicitly, products that contain them that would be appropriate to regulate.

So, if we do have remarks on those things, I would encourage you to bring that stuff up. Now is the perfect time for that, because it is the public comment period, and if there's some scientific, solid basis for the department to be considering something else, now is the perfect time for them to be hearing about that from the panel. So these questions are a little narrower than that, and in the first

grouping, if there's something else that you think ought to be out there, I think is very much appropriate for the panel to do that, based on the legislation.

So, with that, I'm thinking of starting with Helen and working around that way, just to circle it in a new direction with the first two questions, and anything else you might want to add.

So is everybody good with that process?

PANEL CO-CHAIR FONG: Uh-huh.

PANEL CO-CHAIR MORAN: Okay. Helen, you're on.

MS. HOLDER: So, actually, my comment is not specific about the categories, but I just want to commend the department for articulating the values, as we've come back to many times, clarifying, and I think this language is much clearer and much easier to act upon. So I just wanted to just say that was very, very good.

PANEL MEMBER COHEN-HUBAL: So, echoing that point, I think, this time around, there's real clarity in sort of your objectives. I think you've selected product categories where there is a void in kind of -- you've picked areas where you can have an impact, where there are needs that are not necessarily met by other jurisdictions and other activities, at least in the public sector.

Then what I would say, too, though, is that you've also -- you've got a couple of the ones from the previous

Work Plan that's a little bit lower hanging fruit in terms of data and methods, and I think it's going to get -- I think you've picked some areas that part of why they haven't been as -- well, they haven't been clearly addressed in a lot of ways because, again, there's not sort of that regulatory mandate on the federal side, maybe, and it hasn't been, really, across many jurisdictions, right?

So, when you're picking articles, whether it be in the furniture or the -- what was the other category you have? You have a couple different ones in there -- building products and things like that -- there's a lot of interest and a lot of activity around those areas, but there's going to be a lot more data gaps, I'm pretty sure.

So I think this will be fascinating. I'm just, when you're implementing -- I mean, this is -- again, you haven't -- you mentioned that you were over-ambitious in how many products you would be able to put into the pipeline. This is no less ambitious, but it's much more clear, and articulated in a really tight, focused way. So I appreciate that.

PANEL CO-CHAIR MORAN: All right. Ken, on to you, particularly focused on the first couple questions, and anything broader you want to bring up.

PANEL MEMBER GEISER: Yes. Thank you. First of all, I think that the goals now, or the policy, goals,

objectives, are very doable and very cogent. I think that they were a little broad before, in the older -- in the original Work Plan, and now these look very -- they look like you've learned, and these are well honed in that sense, which I like.

Generally speaking, I agree with the way in which you've chosen specific product categories to look at. I think that mostly makes sense. I have some concerns, though, and one is the absence of the word "workers" in the (indiscernible). I understand what you are saying, that workers are so ubiquitous in all of this that they may be just implied, but implied is one thing, and not recognized is another.

I don't think it would be detrimental to the way the goals are written at the moment, but it just seems to me that that's an important thing that you've taken on, and particularly (indiscernible) home insulation, which is mostly a (indiscernible) kind of thing, and I'd hate to think that the assumption is that we're moving away from (indiscernible) about workers.

So I would encourage something having to do with the word "worker," or "occupational" or whatever. I know you don't want to cross over into the business of other agencies, but I (indiscernible) in the authority, and important particularly for workers.

The second area is the one that I prefigured already, and that is, I am concerned about building materials, particularly the structural elements of building materials. It's a big area, and there's a lot of controversy. Some of you may be aware of the healthy building materials credits that the Green Building Council has attempted to put into the LEED standard, and some of the politics of that, which has been difficult.

I think that it's useful to, if nothing else, connect up with folks at USGBC, and try to understand that, but I really think your objective is to stay with the idea of consumer products, and in my mind, the construction element in a building is not necessarily a consumer product. Wall surfacing, the carpets, the various elements in the building might well be something that impacts the indoor air quality.

So that's not my only reason. It's most that I just think the category is too big, and (indiscernible). Well, let me make that clearer. I find your interest in food packaging to be particularly useful. I think that's a very good one. It's an area that is becoming very ripe. There's a sort of an in-good currency to think about food packaging, and food packaging -- thank you. All right. Thank you.

PANEL MEMBER LINARD: My orders.

PANEL MEMBER GEISER: Okay. Thank you, Jack.

Food packaging. I think that the way you've defined it, as dealing with only those elements that are maybe too narrowly focusing in on, the effect of migration into food, is too narrow.

I mean, you've got another goal here, which is to be concerned about water and water resources, and to the degree that food packaging is one of the kinds of pollutants that is showing up a lot in, certainly water, in surface waters, but also in the ocean, it seems to me that that's a "two-fer" that you can get out of looking at food packaging a bit more broadly than just in terms of its migration and effect on food itself.

There is also this growing -- you're probably aware of this growing NGO movement around the Pacific dealing with plastic pollution from land-based sources, and California is clearly one of the big players in that, and to the degree that food packaging is one of the things that's showing up a lot as one of those sources, it seems to me that speaking to that issue can be very useful here as well.

So I like the topic, but I think that one is a bit too narrowly drawn. On the construction materials, I think it's too broadly drawn. Thank you very much.

PANEL MEMBER COHEN-HUBAL: May I ask a clarifying question?

PANEL CO-CHAIR MORAN: No. Why don't we go around. Write yourself a note. Thanks.

PANEL MEMBER LINARD: I found it interesting that, in your assessment of the previous Work Plan, you specifically mentioned Colgate-Palmolive by name, which brings me to the question that, in terms of beauty and personal care, many of the chemicals that you have selected are actually approved drug products in the United States, benzophenone, triclosan, in this case for oral products specifically, and also titanium dioxide.

When you talk about -- I mean, we're looking at the product categories "clearly and sufficiently articulated." Does that include drug products as well, which are regulated under FDA, but a completely different division than cosmetics, which are, strangely enough, the Center for Food Safety and Nutrition, whereas drugs are regulated by the Center for Drug Evaluation and Research, and are approved separately, and given actual approval by FDA?

DEPUTY DIRECTOR WILLIAMS: So I'm going to answer that question, and by way of that answer, I'll speak a little bit Ken's concern about construction products, which is, there's a very clear definition of what a consumer product is in our regulations, and maybe that's something we should include in the Work Plan, just to make sure that

people are clear, and it says drugs are excluded, medical devices, dental devices, strict pesticides.

So there are some things that are very clearly outside the scope of the regulations. However, there are some things that are in the regulations. So, not that I'm saying we're going to do it, but structural elements of building products, those actually are consumer products per the California definition.

PANEL MEMBER LINARD: So, yes. I just think, make it a bit clearer, because a lot of the drug products are regulated primarily by FDA's Drug Group, but they're also regulated as cosmetics.

DEPUTY DIRECTOR WILLIAMS: Yes, and it's very --

PANEL MEMBER LINARD: Both regulations apply.

DEPUTY DIRECTOR WILLIAMS: It's a very messy landscape --

PANEL MEMBER LINARD: Yes, I know.

DEPUTY DIRECTOR WILLIAMS: -- to figure out what the claims are. I mean, a lot of it depends on what the claim are around the product.

PANEL MEMBER LINARD: I know. I manage our drug program. It is messy, but the bar for going from cosmetic to drug in the United States is incredibly low. Most of our over-the-counter drug products are actually cosmetics, and everywhere else in the world -- so I just again want to make

sure we clearly articulate what's covered and, by inference, what is not covered.

Then, just lastly, on the food contact, I know you answered that you're focusing as well on the aquatic toxicity of some of these, but 90 percent of what you've written in the document is on issues with packaging chemistry coming into food itself, and then the human health issues that that causes.

So, again, in terms of clarifying it, make sure it's not just a throwaway line at the end that you will look at the fate and effects of any of those chemicals. You know, make sure it's a little bit more prominent than it is now, because right now you talk pretty much only about food contact and impact on human health.

PANEL CO-CHAIR MORAN: Thanks, Jack.

Ann, focusing on the first couple questions and anything else you want to say.

PANEL MEMBER BLAKE: Thank you. And I guess I will try to stick to those questions, Kelly.

Are the product categories clearly and sufficiently defined? Yes, absolutely. Great work on that, and great work learning from your engagement with stakeholders to provide that clarification, and sticking within the regulations, which are quite wordy on this aspect of what you can cover.

I would say, also, great rationalization for drafting the two categories that you did, and I think that will help us when we move forward to the prioritization discussion. You went somewhere where you don't have an impact on the supply chain, because the key point of intervention is elsewhere, and then, also, you know, whether there are alternatives, and you did not need to really push for innovation. So I think those are things that we want to keep in mind when we talk about prioritization for the remaining product categories.

I would echo -- thank you, Ken. I would echo the concern about making an explicit mention for workers. I think that was the strength of the last -- a strength of the last Work Plan, and I would like to see that more explicit here. I really appreciate that you feel like it's integrated into all of these, and I see that in the descriptions of the product and chemical target areas, but I think making it explicit is something that DTSC can provide a specific value on, and it's a series of sensitive subpopulations that are frequently forgotten.

So I would echo that strongly, and I would also say -- and this also gets into our prioritization discussion a little later, which is, thank you also for taking on food packaging, as a result of the many petitions, for all the different potential multiple exposure pathways that you

mentioned and know well. I think we need to think a little more about what the value add is that DTSC can bring to that discussion, because there is a lot of activity around it, particularly around the PFAS chemistries, but I do feel like there is some value add there. So thank you for adding those two.

PANEL MEMBER SCHOENUNG: I want to make just a few comments on this. I want to agree that I like the ones that you've dropped, and the reasons you've chosen to take those off makes sense. So I appreciate that clarification. I also like that you've added lead-acid batteries. I'm glad to see that we took one lead out but we put another lead back in, because we still use lead in way too many things, and I'm just going to put a plug out there.

It doesn't, maybe, fit in the scheme of consumer and high-exposure potential, but solar panels are moving towards lead-based perovskite materials, and it would be nice if that was addressed at the design stage, as opposed to 20 years from now, when people are taking them back off their roofs, trying to figure out what to do with leaded material.

I'm going to put that out there as something to think about, if there's a way to preempt that in some way. That would be an interesting signal to send to the industry, to really think about that, because there are potential --

there may be potential alternatives to needing to use lead in those materials. It's a trade-off of performance.

Yes. Helen is shaking her head, going, "No, maybe not," but I think there needs to be effort put there, because there's a lot of investment right now on lead-based perovskite systems for solar panels.

I also just want to indicate that I'm glad to see the changes to put schools and offices in here, and the focus on the indoor environment, that it's not just homes. Most of us actually don't spend very much of our day, other than sleeping at home, but we spend a lot of time in offices and schools and other workplaces, other than manufacturing-type facilities, and specifically work environments is important, which links, to me, to the building materials.

I see kind of a fuzzy line, actually, between the building materials category and the home furnishings and décor category. Where does carpet land, for instance, in those two, if you're renovating? Does that land in building, or does that land in "I'm choosing to redo my floor with carpet," and adhesive issues and so on?

So I imagine some of that may have come up in your conversations, but I think I would counter Ken's comment about the building materials, and maybe it is too big and too broad the way it's stated, but I wouldn't want to see it

taken out or narrowed down too much, because I do think there is this push from the Green Building Council, and work through the Healthy Building Network, and Tom Lent and their folks, and the Data Commons, to really push, and my little interaction with them is that that community is actually engaging in this discussion, you know, everywhere from the architects through the contractors.

So I think there is some ability to get some resonance with that community, where they're going to go, "Okay. Yes. Fine. Just tell us what to do, and we'll figure out how to do it," as opposed to some other industries, where they just keep going, "No. We're okay. No, we can't do that." So at least there's, you know, some engagement there.

I imagine, Karl, that you might already know, at UC Davis, there is a faculty member in public health, Debbie Bennett, who has been doing a lot of work on the indoor environment and the exposure potentials there. So those are my comments.

PANEL MEMBER SUTTON: I'd like to thank the group, the presentation this morning, and also the background document, because I learned a lot from your lessons learned, and it helped me read the Work Plan and see it as so much comprehensive and cohesive in the way everything fits together, compared to the previous plan, stuff I didn't even

identify. Based on your lessons learned, I now see that this is a really cohesive and even more useful document compared to the previous one.

So I do think the categories are clearly and sufficiently defined. I liked the way they're laid out. I particularly liked mentioning auto products when it came to cleaning products, and part of that is because, if you're using a product on your car, its pathway to the environment might be different. It might not be going down the drain into a treatment facility, where it's going to get a bit of degradation. It might be going right to your storm water. And so that different pathway might create different concerns out in the environment.

In the Bay Area, we've seen some evidence, some preliminary evidence, from monitoring showing, for example, monophenolic oxalates can be present at significant levels in areas influenced by storm water, rather than our wastewater. You know, it's a different pathway, and possibly the thought is that that could be due to some car products, so, you know, some preliminary evidence there.

Then I guess I'm more on Julie's side and less on Ken's side in terms of the building products category. I really liked the big category. You're not necessarily going to choose a priority product, you know, that encompasses the breadth of that category, but, again, thinking about the

environment, thinking not just indoors but outdoors, as we see all this construction in our communities, our growing population, I'm thinking about how this stuff is getting out into our urban environment and our waterways. So, for me, I like the breadth of the category.

One category I saw that fits well with some of these, some of the goals that wasn't mentioned, was electronics, and not that I'm trying to wedge that in here, obviously, but I imagine that the complexity of the supply chain that you guys mentioned with clothing could be a big issue in the electronics category.

In terms of data gaps, one of the -- obviously, the problem you're going to --

PANEL CO-CHAIR MORAN: We're just doing the first two questions right now.

PANEL MEMBER SUTTON: First two?

PANEL CO-CHAIR MORAN: Yes.

PANEL MEMBER SUTTON: All right. Get to that later. I think that's it.

PANEL MEMBER CARINGELLO: I'm not sure what more I'm really going to add, but I'm going to try, anyway. You know, the first question, I absolutely think the way it's written this time around, and after what Rob said, that yes, the product categories are clearly and sufficiently defined, and they very, very closely match with the stated policy

objectives.

What I would say -- and I guess I'm more aligned with Ken on this -- is that some of the categories are very broad, and I think there is application for having very broad categories, but I think we've got -- in this case, we've got some very broad categories and we've got some narrow categories. So there is kind of, which direction do we choose to take? You know, you've got the lead-acid battery. It's kind of "Okay. Here's a pretty narrow category," and so you've got different stakeholders looking at it in different fashions, you know.

So, while the broad category gives you a much wider net to tackle going forward, and making choices, and a lot more leeway, it does then make it harder for stakeholders, up front, to engage you. Say, with the fishing tackle people, they knew right away what you were after, and you got a lot of information very, very rapidly, maybe more rapidly than you wanted, you know.

So what I'm not seeing, I guess, is the balance, maybe, that you've left some very broad and some narrow, and maybe that's intentional, but I kind of think, like Ken, what you're not giving, then, is for the stakeholders to jump in earlier, to say, "I either with you here" or "I disagree with you," because some of the categories are so broad that people just aren't going to know what the real

aim is, but I think, if they delve into the document, they're get a lot of hints as to direction, but it's just a general comment, is I think the categories do kind of vary.

Also, with the policies, I think they're very well written. I think they're very clear. But, much like people were talking about with workers being missing, this time it looks like the focus is on children, and, while children might incorporate pregnant women, say, it might incorporate infants, they're not being specifically mentioned. I don't have an issue with it, but is there a message that people are going to take from these other sensitive subpopulations, like the elderly, are not mentioned this time around?

This being a three-year plan, it's right to say, "We can only tackle so much in three years, and this is what these products -- what we're going to tailor to for these three years," but I think maybe, then, in the Work Plan itself, then, a mention of the over-arching policy with the regulation, if that is embedded in at the beginning, saying, "Okay. Reminder. Here's what the regulation is. It covers all these things. Here's what we're tackling in this three-year plan.

PANEL CO-CHAIR FONG: Thank you, Kelly. So, in terms of the first question about "Is it clearly and sufficiently defined," I thought you guys just did an excellent job, I would say, but follow your thinking (sic)

as I was reading through the document. So I really appreciate that. So thank you very much.

As I was reading through, you know, the Work Plan, I think one thing that really I noticed was that DTSC tried to maximize its impact by minimizing overlap with the regulations, at least complementing the regulations. So that also really came through for me. So, excellent job. Thank you.

So the second point I want to make is related to workers, and totally agree with Ken and Mike about not seeing it in the document itself. So, when I was thinking about it, I thought, is it a situation where DTSC just didn't have the expertise, or didn't have somebody that was really passionate about worker and worker exposure that was pushing that point during the conversation, during your discussion? Because I previously remember, in the previous panel, Julia Quinn (phonetic) would always push the point about workplace and worker exposures, and I was thinking, is that the case within DTSC, that there isn't someone that's passionate or would have expertise on this particular topic, such that they're not pushing that point during your internal discussions? So that's another thing I thought of.

In terms of the second question about specific hazard endpoints, I notice nobody touched that, so I'm going to, and so I want to make a suggestion about perhaps

elevating focus on endocrine-disrupting chemicals, EDCs, and the reason for that is because there's a lot of concern about, you know, exposure and potential hazard related to EDCs, but the regulation is just not really a driver in terms of finding alternatives or safer replacements right now.

That's definitely demonstrated in what's going on in the EU in terms of, the European Parliament just sent back the EDC criteria, you know, sort of starting over in terms of just coming up with a definition, or working definition. So I think that's another place where, you know, if you're talking about specific hazard endpoints, where you guys can have a really major impact. Thank you, Cher (phonetic).

PANEL CO-CHAIR MORAN: Thank you, Art. So I've just got a couple brief comments, and then I'll make sure to go to Elaine for her question, and anybody else for any follow-up that we have before we move on to the next set of questions, where maybe we'll start with Becky, since she started on them, anyway.

So, in terms of the questions, I agree with the other panelists. I think the categories are clear and sufficiently defined and well based. I do want to compliment the department on the layout of the policy priorities, and join others in saying that I think,

particularly in light of our discussion yesterday, where we were talking about decision making, and being able to use policy priorities of the state as well as policy priorities of the individual organization that's doing the AA, that articulation is very important, and that's something to think about.

I think that's why you're hearing about workers, and perhaps, in the document, you've laid out the policy priorities for the Work Plan for the next few years. There are also some policy and decision-making priorities that are laid out in the regulations, and somehow pulling that forward might end up being a way of addressing that, if you don't choose to add workers or some other thing explicitly as a policy priority, and, of course, that's a policy thing, so that is up to the agency.

In terms of the priorities and endpoints, my comment here is more of a lament. I see the water policy priority, and I see some linkages in various places to water, but I feel that our monitoring programs are not at this point providing the robust data that we need to both understand where chemicals are coming from.

So we have a lot of monitoring data for very traditional pollutants, and we have specific problems, and we've been working on them, copper in brake pads, or sort of going out on zinc and so forth, but there's a lot of

emergent contaminants out there for which we don't have the kind of robust data sets, because our water-monitoring programs are not generating them for these other pollutants, and we also lack linkage information. So, where we know there's things present in aquatic biota and aquatic ecosystems, we aren't generating the data to help us link those back to the individual products.

I've seen all kinds of really intriguing stuff about runoff from buildings carrying various chemicals through urban runoff straight, untreated, into creeks and down and an ecosystem, but the chemicals that are measured there aren't being measured out in the aquatic environment. We're not doing that mix. We don't have anyone funded to go back and say, "Okay. Now, we found this thing in the aquatic environment. Let's try to apportion out what those sources are, and get the wash-off studies and other data that are needed to get there."

I'm particularly interested in outdoor building products in this area, but I don't think they're ripe for -- because we don't have the data to do that, at this point, I don't think they're ripe for coming up with a priority product, because the data aren't there, but outdoor building products, there's a lot of different intriguing data sets on leaching from paint and leaching from roofing materials, in particular, and the runoff flows directly on

impervious surfaces, so it doesn't soak into soil in many locations. It just runs straight into the water body.

So there's really direct, fast connective pathway from that runoff, and I think that's something that hasn't been thought a lot about in manufacture, but we don't have the data sets to support that now. That's also important because runoff supplies are starting to be used as sources of human drinking water, and that's going to be increasing. We look like we're turning into another drought, so that's going to continue to increase, and, again, so then we have questions not just about aquatic safety, but also about human safety.

So I've actually received phone calls. Every month or so now, I get a phone call saying, "Kelly, what's in outdoor building products, and are they going to make -- you know, are we worried that our drinking water isn't going to be safe when we go for potable use of our runoff?"

So those questions are out there, and we need the science first, so I'm putting that out there as a lament and a challenge to our state to try to figure out how to fund the work that's necessary to understand that, and, of course, a challenge to the building community to identify that there is this runoff that's very direct to ecosystems, potentially, and I think we're going to soon be drinking this water, that we really need to think about the safety

for the ecosystems and for humans of all of the ingredients in outdoor building products.

So that was a little longer than, perhaps, it should have been, but overall very supportive. I want to go to Elaine, who's been extremely patient with her question -- thank you -- and then anyone else who has anything they want to add on.

PANEL MEMBER COHEN-HUBAL: No, that's fine. I already had my turn. So I'm just curious because, on workers as -- well, no. It's actually a question to the panel, because at least three of you, four, maybe, called out that workers were not in the sort of priority policies for this round, and what I'm wondering is what the major concern is.

So Mark used a term yesterday that I really like, and I guess I haven't heard used often enough, but he talked about point of views, and so what I'm wondering is if the workers that you're specifically interested in calling out in the agency's policies at this point, in this context, are really more those workers at point of product use, rather than sort of workers more generally. Right? Because I think that's -- I think, for the agency and DTSC to have an impact on the product even sort of landscape, I felt like their policies were helping really do some -- I mean, somebody said three years is a long time. Three years is a

very, very short time.

So it's all relative, right, in terms of what you're trying to accomplish and how ambitious you're being, so I felt like it's very nice to have a focus. Mike said, you know, "Just clarify that these other vulnerable groups are still important," but I'm wondering if any of you who were concerned could talk about whether this "point of use" language is helpful.

PANEL CO-CHAIR MORAN: I'll do that, but I do want to offer Meredith -- I'm sorry, I missed you -- an opportunity if you want to say anything first, and then we can -- I think this is a good discussion topic. Yes.

DEPUTY DIRECTOR WILLIAMS: Yes, it's a great discussion topic. I just wanted to follow up on a few things that just came up throughout the conversation. We appreciate all the input about workers, and I'm interested in hearing even more about that.

The monitoring programs, I would turn around and ask, and this is an ongoing conversation. I'm going to throw it to you, you're going to throw it to me, I'm going to throw it to you, but where is the point of influence where Safer Consumer Products can shape monitoring programs around the state? That's a real challenge for us.

I wanted to talk about this messiness between the building products and the furnishings, and a great example

of that is rugs and carpets. Rugs are furnishings, and carpets are building products. So we recognize that, and we'll do our best to navigate that.

Then the last thing, about the building products and the large -- we feel as though there is a tremendous amount of activity in that space that we can leverage. So you said they may tell us, "Tell us what to do," but I think that what we have the opportunity to do is say, "Tell us what's been done."

You know, these huge real estate organizations, Kaiser Permanente, Google, Facebook, have taken some pretty aggressive steps around toxics in their work environments, and they have found ways to eliminate certain toxic chemicals in products, and there's an opportunity for us to level the playing field, and I really want us to be able to take advantage of that. So I just wanted to throw that out there.

PANEL CO-CHAIR MORAN: Okay. So potential reactions to that, and anything else, and I know, Elaine's question, I'd really like to hear some responses to that, and we've got Ann and Ken.

PANEL MEMBER BLAKE: Thank you, Elaine, for putting some words around that. I think I wouldn't want to exclude manufacturing workers in any of these applications, but you're absolutely right. The main concern of exposure,

and the ones that tend to be forgotten, are the "low barrier to entry" jobs that have high chemical exposure, tend to be immigrant populations, vulnerable because of past toxic exposures, in many cases women of reproductive age, but also not excluding men.

So yes, I think that's very helpful, and, also, very often the products that are used are considered safe for a much shorter exposure, and have been tested for that. So nail salon products is one. Clean products is another one that comes up a lot, you know, when you formulate it to be safe for a certain exposure, and then you don't calculate in a potentially much longer exposure. Nail salon workers don't work, you know, five days a week, eight-hour days, and those products were not designed to keep them safe.

So, on particular hazard endpoints, I just wanted to add, also, that if we look at particularly vulnerable worker populations, some of the hazard endpoints will emerge as we dig deeper into these product categories and product exposures of concern. Nail salon products will be reproductive hazards, hormone-disrupting chemicals. So, just a way of pointing that forward without really, you know, saying right now which hazard endpoints we should go after.

PANEL CO-CHAIR MORAN: Ken.

PANEL MEMBER GEISER: Well, thank you, Elaine, for

your question, and I'll try to -- my interest has about four different lines to it.

PANEL CO-CHAIR MORAN: Ken, can you grab the mike a little closer?

PANEL MEMBER GEISER: Sorry. Sorry. Sorry. Sorry. Sorry. Sorry. I'll work on it.

UNIDENTIFIED SPEAKER: (Indiscernible.)

UNIDENTIFIED SPEAKER: That may be true. I had trouble hearing you.

There was first the issue of just not seeing workers here.

UNIDENTIFIED SPEAKER: (Indiscernible.)

UNIDENTIFIED SPEAKER: Try that one.

PANEL MEMBER GEISER: Try that one? Hello? Hello? Testing, testing. Okay.

UNIDENTIFIED SPEAKER: (Indiscernible) on the transcript.

PANEL MEMBER GEISER: The first level is just not seeing workers here, and recognizing the importance of acknowledging workers. That was one piece of it.

The second piece is, every product means workers. I mean, somebody makes products, and so workers are always implicated in any of the -- and any analysis means that you're going to want to take a look at what the exposures to workers are.

A third level is, some of these products that we may be considering, particularly like office products or school products or things like that, we're talking about, certainly, workers are point of views as well, in that sense.

The fourth level of that is, because I think it's always important that we're thinking about the life cycle of any product that DTSC takes up, then it's workers all along the supply chain, and workers all along the disposal trajectory. So it just seemed to me that workers are so -- I mean, Meredith said it well. Workers are sort of integrated into everything, but it seems to me they shouldn't be lost.

Having said that, then I went back and took a look. Where would you introduce the word "worker" in this? And it's a little complex how to think about that. I think I'm really urging it, but I haven't a good solution at the moment how to do it. Thank you.

PANEL CO-CHAIR MORAN: Okay. Other comments on the worker thing, or anything else that anyone wants to raise before we move on? Jack?

PANEL MEMBER LINARD: Yes. I remember way back, when the Green Chemistry Initiative was passed, there was questions about "Does DTSC have authority over worker safety?" And I think we came to a healthy resolution, and I

don't know if it was formalized or not, but Cal/OSHA does have responsibility.

I think my recommendation is that you keep it on the radar, and then pick out certain areas where, for whatever reason, there are some deficiencies in the worker safety program, and I think you've talked about nail salons and things like that as maybe one of those areas where you need to put some focus. Because Cal/OSHA does have responsibility on the manufacturing side, that doesn't mean you neglect it and forget about it.

So I like the idea that -- Elaine said, "Point of use." I think that's one area where maybe OSHA doesn't get as involved, and, therefore, it might be appropriate for you to get more involved, but I don't think you should just say, "We're not going to do it." I think you have to keep an eye on it from the entire manufacturing, and I like the idea of end-of-use requirements as well, because throwing away products can be kind of toxic as well.

PANEL CO-CHAIR MORAN: Karl.

BRANCH CHIEF PALMER: Thank you. I just wanted to point out that, in the Work Plan, we tried to address what we called some "other factors." On page six and seven, we have a little paragraph in there, and we address workers, and we also address things like products where there's potential for a long-term, more repeated exposure, and we

also, importantly, I think, look at categories that may disproportionately affect people who live and work in environment justice communities, and these are all factors that are going to be highly dependent on the specifics of that category.

So I just wanted to call that out, and I think what I'm hoping to do is call out to those people listening here, and the experts in these categories, like, so, for, in building, USGBC and Health Building Network, to give us input on this Work Plan that will help us frame these categories, and maybe give us more information to take into consideration these factors you all have raised. So, thank you.

PANEL CO-CHAIR MORAN: Thanks, Karl.

So it looks like we're ready to move on to the second group of questions, so that's the last three, anticipated challenges in identifying specific products, anticipated data gaps and information needs, recommendations for doing that, and recommendations for prioritization methodologies and rubrics.

We'll start with Becky and go backwards this time.

PANEL MEMBER SUTTON: Regarding challenges in data gaps, obviously, one of the first one will be what's in products, and then the other data gap I'm thinking of is actually something Kelly just brought up, the pathways to

the environment, linking the linkage between the product and its presence in the environment.

So, in terms of what's in products, for some of these categories, we have some public or private databases, and, of course, I want to call out the Department of Public Health's own database on Prop 65 chemicals in cosmetics as an important resource, which I'm sure you guys already know, but maintaining that database is an important way to leverage state resources across multiple, you know, agencies or focus areas.

California also last year passed the Cleaning Products Right to Know Act, so that should mean that we have even more important on cleaning product ingredients and in a broader range of products.

That said, something I brought up yesterday, you know, your ingredients in your product is not always what you might be exposed to when you use it, and the one case I'm thinking of is powdered cleansers with chlorinated antibacterials where, when you're using it, you add water. There's some reactions, and you are off-gassing a complex range of volatile organics that are not necessarily considered ingredients in that product.

Then I'm thinking of pathways to the environment. Kelly kind of drew this all out, and to address that data gap is going to be tricky. I mean, a lot of times, the

studies aren't going to be there. You can start to look at data in the literature, in terms of storm water or wastewater testing, monitoring in environments where one or the other of these pathways is very dominant, but it's tricky, and, you know, I help out a monitoring program, so, obviously, there are some pathways where we can discuss leveraging opportunities to create some of this data, hopefully.

I also want to call attention to DTSC's nontargeted analysis products and efforts, because that could also be another way to build some of this information in the environment. There's already a lot of great work there, and if we can again support that effort, and leverage those skill sets and abilities, which are pretty new and complex, then we can all benefit.

PANEL MEMBER SCHOENUNG: I'm going to pass, because I don't have any specific comments on these questions at this time.

PANEL MEMBER BLAKE: Let's see. I'm actually going to pass on the "challenges and data gaps" question, because I know that that will probably be addressed. What I'd like to do is start us a little bit on the prioritization, so I started to think about, how would you go about prioritizing? Even though you've narrowed this down, this is obviously still a vast scope of products.

So I was thinking about several things to think about, and you mentioned a couple of them in your discussion of why you dropped a couple of categories. One is thinking about, what is the unique impact of DTSC in the application of chemical and product combination, or, you know, the broader impacts of that selection of that class of chemicals or class of products? And I don't know, necessarily, what that is, but I think you have a fairly good idea of what that might be.

This is one you could sort of take or leave, is whether -- and I think it's related to the value add, is leveraging current work. I can't believe I just used the word "leveraging," but here we go. So I'm going work (sic), for example, of PFAS and water contamination, and the various different sources of that.

One that, Meredith, you hinted at in the fishing angling piece that, in that category, you didn't feel like safer alternatives innovation needed to be driven, so another value add for DTSC is, where can you highlight that safer alternatives are needed, or, if there are some out there, what are the better ones? You know, what's the functionality, the function, at least, that we're after, and the performance that is not currently being met? Can we meet it without toxicity to human health with the environment?

Then I'm going to float this one out there, and again see if this works or not. One of the things that several colleagues of mine and I have been thinking about for years is, can we identify a chemical and material class that crosses industrial sectors, that, if you start to solve the problem in one functional area, with a different chemistry, can you translate that? So that's a potential ripple effect that DTSC could initiate, and we have some suggestions for what those might be.

In terms of data gaps, I think there is a function that you can serve by highlighting data gaps as well, as we've been starting to talk about around this table, is like where we would like to focus on this product in chemical combination, "Here are the gaps we're missing." Ones that Kelly and Becky have already brought up is, what are the linkages between environmental contamination and the products that they come from?

PANEL CO-CHAIR MORAN: All right. Jack, you're up.

PANEL MEMBER LINARD: Try this mic. Anticipated challenges in identifying specific products within the categories, I think you just have to try to understand which of those products would have the greatest impact on the population, you know, use. There's no sense in going after a product that just doesn't have the sales volume. You need

to prioritize and figure out, what are the big products that are out there? And I think there are ways to get that information, sales data.

Certainly, in a number of the categories, the formulations are known, because you put them on the label or on a web site. That's pretty simple. And this gets into the next discussion after this, but there's an awful lot of knowledge about prioritization. I always fall back on Health Canada. They've prioritized every chemical in commerce, a few years ago, into high, medium, and low, and then did risk assessment, exposure assessments for all those, and much of that is public.

So you can look at that. Health Canada did a marvelous job in the chemical management plan regulation, so that, but also there's a ton of data out there from, in my industry, the Cosmetic Ingredient Review. SECS in Europe has done a lot of evaluations of safety of chemicals in cosmetics and personal care products, and you've talked Region ECA (phonetic) already.

So I think there's a wealth of data out there. What you need to do is figure out which of these chemicals are used in the biggest tonnages, and then have obvious potential for the highest exposure in a consumer product. So, yes, I think the data is there. It's going to take some digging to find it.

Again, that's the same thing for closing data gaps. I would go to Health Canada because, again, they've done a phenomenal job of assessing what's out there and what needs to be done. So I think, really, there's a wealth of information, sometimes not easy, and then, don't forget, you can always ask a manufacturer. They may not be the most forthcoming, but you can ask, and sometimes you may do it under CBI, but it doesn't hurt to ask.

So I think, looking at that, the other thing which -- it's also interesting what's the role DTSC can play. I've mentioned it before. I deal with cosmetics, personal care products. This year is the 80th anniversary of the only regulation that we deal with, and that's the Food, Drug, and Cosmetic Act of 1938. It will have its 80th birthday on June 25th.

It is incredibly out of date, but the industry and I have also been working with Dianne Feinstein to come up with modernization, which would require FDA to actually do some safety assessments. So we're looking for improvements in this area from the federal side, too, so I think DTSC can, you know, recognize that that's going on.

We're looking for something more than what was offered 80 years ago. It's a real frustration by many of us to have to deal with such an antiquated regulation, but it's the reality. So we're working very hard to come up with

something that is palatable to everybody, and in our case, we want FDA to be much more -- to have a much bigger role in assessing prioritizing safety of cosmetic and personal care products.

PANEL MEMBER GEISER: Yes. My comments are a bit random here, but, first of all, yes, in terms of data itself, there's a lot of information out there on exposures in children, and a lot of good databases. The states have done good work on this. As you know, Washington State prioritizes this area in particular, and there's a lot of really great information there, and they do testing and all, and so that's a -- I'm sure, through your compact, but also your relations, you know those folks well, can -- is the thing still on the board, here?

On the construction materials, HBN and ferrous, and the various elements, the databases that they've developed certainly are useful and very helpful, but I think you're right, Meredith, there. They would be very helpful also in sort of helping to identify what would be a good area to be doing work on with regards to building products.

I've also found -- in just trying to do some of this work myself for the UN, I've found trade association data is useful as well, going and looking at various international trade associations that sometimes post data, particularly on amounts of products and things like this.

I talked to your staff person yesterday about the Mintel database, which I think is a very interesting-looking database on chemical constituents. It's only on specific categories, but I think it's a -- what I'm looking for is most of those, and in the next month, as I'm sort of focused on that question, I will definitely let you know whatever I find on this, because it's really a big interest of mine at this point, is looking at the flow of products around the planet as a vehicle for carrying dangerous chemicals around the planet, and thinking about that question, how do we address that particular issue?

In terms of prioritization, I mean, I thought you did such a good job at laying out the criteria for prioritization, when you actually did the first selection of products, that I don't know that I can offer much, but just the things that you did before, which is here is a place I think exposure -- while I'm hesitant about using exposure heavily in thinking about substitutions and things like that, I'm not here, on prioritization. Exposure is a very important -- the variability of exposure itself is really important.

The availability of alternatives, or, actually, the unavailability of alternatives, ought to be another criteria for thinking what is the range or possibility of alternatives in the space of that product category, which I

think is an important one.

I also like the projective quality of what Ann suggested as the "ripple effect." I think it is really a useful vehicle for thinking about prioritization as well. What if we chose this product, and what would happen down the line or throughout the sector as others become aware of and interested in that?

I think the food packaging product category has a lot of that potential. If California is looking at food packaging, it's one more message about food packaging that could be -- goes into all kinds of packaging, clothing packaging, all kinds of packaging, huge amount of our waste stream, and it also is carrying a lot of really heavy chemicals into water, air, human life, and, also, I think it's an under-considered area for this.

Challenges. By my hesitancy about the construction materials, I was really focused on the structural materials, not other building materials, which was my concern, but it also has to do with just how that would be -- structural products would be a difficult area, I think, to wrestle in, just because of a lot of the struggle that is going on with the U.S. Green Building Council and all, but it seems to me that also is an opportunity. So I can see what that might be a useful area for work.

So those are my, unfortunately, random thoughts. So thank you very much.

PANEL CO-CHAIR MORAN: Thank you, Ken.

So we're continuing to go around on the last three questions on the Work Plan, and so we'll be going next to Elaine and working our way back around towards Mark, who, if he wants to say anything about the Work Plan, would be welcome to do so.

PANEL MEMBER COHEN-HUBAL: Okay. Thank you. So I'm just probably going to focus on priority products and methodologies. So one of the things that struck me about the work plan, and really the program in general, is there is a focus on sort of "data rich" in the landscape of what we consider to be data rich here, you know, sort of data rich product chemical categories?

I question that just a tiny bit, especially in terms of things like cleaning products and personal care products, in terms of, so what's the added value of DTSC sort of jumping in and engaging there, when there is so many -- there are other active initiatives that have been and are pushing sort of change in those areas?

So, in some ways, you know, while there's some line between "There's just no information, you know, for us to even begin to tackle it," versus "We know this is a problem, and so does everybody else," where is, you know,

sort of this nice sweet spot where, again, you can really make an impact and drive development of information and methods where there aren't any? And, you know, that doesn't mean a bandwidth thing, but I think it's an important consideration.

The other thing that I would just throw out there is, in Office of Research and Development, we, you know, spend a lot of time on what we're now calling "pre-prioritization," because, of course, "prioritization," in the different jurisdictions under different legislation, means something specific, with certain time lines and things like that, and pre-prioritization is -- so you've heard a lot from people about "There's lot of information. There's all these -- there's lot of information on chemicals. There's lot of information," but the pre-prioritization kinds of approaches that we're really actively working on is to just really to mine as much of that information, as quickly as possible.

Our focus has been on chemicals, and I think what's exciting about your program is its focus on the chemical product combination, and we've started to work with you a little bit on how our approaches might be transferrable, but I think it would be really exciting to sort of, now that you have a little bit of in-house capacity, to maybe take on some of those approaches and

tools, and we could do some transfer, and work with you to really take advantage of that.

I will echo this screening on exposure potential, and I do think a lot of the tools that we've been talking to you about, and this pre-prioritization, could really focus on potential exposure, because, again, that's what's exciting about the product, chemical focus, is that that really is that exposure interface. So I'll leave it at that.

MS. HOLDER: So I think that, now that you have articulated the policy prioritizes within each of the product categories, that you have to use that as a lens. That becomes your first criterion for this, and it should help. It should help now quite a bit, and there is some excellent work in other places to kind of start pointing in that direction, and, particularly, the example that was in my head was children. Okay. So how are children impacted in each of these categories and, you know, is there an obvious intersection of that in exposure potential and impact?

One of the methods that might be useful would be a "day in the life" view of it, where you walk through all the different potential intersections with each of these different categories, and then you find the one that pops out as the obviously starting point. It will usually be

obvious, of what to do. So that might be an exercise that could help you.

On the expected gaps, many of them are the normal ones. Economic impacts are going to be -- it's sometimes not even apparent what that impact is, in some of these cases, or it's just not been quantified. So I expect that to be a gap, emerging contaminants, especially for new things. There are new things coming out all the time in all of these categories, new materials, new products, and so it's very difficult to figure out, out of that space, what to focus on.

Again, data on the performance of alternatives. If there's someone who's using something that's not the mainstream solution to a particular technical need or whatever, it can be a challenge to get a full view of that substance or material.

Then, kind of echoing the exposure and emission question, is that that will probably be a fairly big gap. The good news it that it can be -- it's relatively straightforward, in fact, to fill some of those gaps, because those methods are known, of how to do those measurements, but we have found that it's not always already known, some these emissions, and those measurements, someone has to do them. So those are the comments.

PANEL CO-CHAIR FONG: I think I want to follow

Julie's lead and -- well, hang on. Actually, I do have one topic. Sorry.

So I do have a comment on closing data gaps. I think one thing that's really important to note is that companies -- or there's an increasing momentum towards transparencies by company. So Jack has mentioned in a previous discussion about information on fragrances, which you can actually access from a web site, and I've mentioned in another panel discussion that Apple is collecting full materials disclosure, you know, chemical ingredients on all of the parts and components, and we have accomplished getting at least the first level of full materials disclosure information on over 20,000 parts and components.

Now, that's not to say that those companies, including -- I'm sorry -- companies will just make that information publicly available right now, but, before we can actually do that, we have to know what is. So we're actually -- so companies are really building transparency into their way of doing business, so I think that's going to be really helpful for DTSC's effort.

The part about prioritization, I do agree with the fact that there are other organizations doing, you know, prioritization based on a lot of chemical management-type programs, but I want to throw a caution in there, because most of those prioritization schemes are based on hazard, or

primary focus is on hazard, and I don't think that's enough for this particular program. So, yes, make use of that information, but keep in mind that you need to go beyond just hazard. Thank you.

PANEL CO-CHAIR MORAN: So we have a break scheduled for right now, but I think we're really close to wrapping up this part of the discussion. So I wanted to see if anybody is going to object terribly if we extend for another few minutes. All right.

Mark is going to be free to make any comments on the Work Plan that he wants to make. I have a few comments, and then I'll solicit whether there's items we want to follow up on. We might want to do that follow-up after the break, but we'll see how much there is there.

PANEL MEMBER CARINGELLO: Okay. It never works if I say I'm going to try and be brief, so I won't even promise that, but, on the anticipated challenges, I commented earlier that some of the categories are very broad, so I think that's going to be a challenge, is how do you narrow that down?

I think I want to echo what Helen said, is you've done a lot of work towards that by setting the priorities. Those priorities -- or those policies. Those policies will guide your priorities, and that will also help you bring some of those broader categories down. So I think that

challenge, a chunk of it, is taken care of.

I think another challenge is, as you do that, make sure that, because one of your policies is around wastewater, that you mesh with other agencies in the state. When you look at something that's voluble, carb assumes it all goes up in the air. If it's all going up in the air and attacking the ozone, it's not getting in the wastewater, which, scientifically, we know that's not the case. So I think there's just some careful treading that you'll have to do with how do you describe that, how do you close that data point?

I'd also say -- Jack mentioned Health Canada. They will be another good source if you look at the food packaging. They did a lot of work around that. I think the data gap goes back to what Ann was talking about, is if you look at that, and you want to look at the aquatic environment, how that's affected by it, I think that might be a data gap, but I think there's a lot of information out there to at least start that process.

Another couple things to look at. I think a challenge is going to be, things are changing so rapidly right now that information that you could use to help identify specific products, help with your data gaps, is right now being generated, and the examples I'm thinking of are, in California, you've got the ingredient disclosure

requirements that really come into effect in 2020. So it does help you with this current Work Plan, but it's coming up. But it's going after some of the products in the Work Plan.

So industry is working on that, and it might be able to get you -- it might help you narrow some of those, because, as ingredients are disclosed, and people are going back into their vendors to find out some of the components, you might find that those filter themselves out. So I think the timing for you is very good to say, "This is on our radar," for people to be looking at that while they're looking at ingredient disclosure.

Also, the TSCA reset is ongoing right now. People are busily feeding in information of "Here are the chemicals we know we're using." It's not getting down yet to the level of processors saying where everything is going, but, again, maybe some of these chemicals will disappear off the inventory or, if EPA sees that they're used in very limited quantities, EPA might be taking action.

Again, it's so early. I mean, the manufacturers just submitted their Form As. Processors have another period of time before they have to do theirs. But that is information that's coming, and I think, you know, it might help to some extent, but it's just not there yet.

PANEL CO-CHAIR MORAN: Mark.

Panel Member NICAS: I want to begin by apologizing for my absence. I was on a phone call for a committee of another organization having to do with the fit capability of respirators, not something that this group deals with, but it was interesting because the issue of transparency was discussed, and, unlike this group, the majority there weren't in favor of transparency. They didn't want to release their results. They just want, "The government okays it, that's fine. How did it perform? Well, no one needs to know that." I've summed it up pretty well, too.

My comments are very brief. You know, of the six product categories listed, the ones that I am in favor of, just because I think that they have the broadest impact, just on numbers of people, would be cleaning products, and also the potential for more acute high-level exposures in cleaning products, household school and workplace furnishings, because we all live in houses and apartments, residences, furnished, and food packaging, you know, because, clearly, we all eat food.

The challenge I see, which is really not unique to any of these categories, I would imagine, is the rapidity of change of the recipes that go into it. So, you know, you do an alternatives assessment on three products, and by the time you finish, there are three more. So that's what I

see on major challenges, yes, and there's ongoing data gaps for sure.

PANEL CO-CHAIR MORAN: Thank you.

Just to wrap these up before we see if we'll have a discussion or not later, I'll just make a few brief comments. So I think that we've pretty well fleshed out the anticipated challenges.

I think one of the themes that I want to mention in that, and addressing data gaps, is that sometimes you can use proof of pathway from one chemical in the product to show another chemical also probably has the same pathway, and some of the biggest opportunities for learning in this area is with chemicals that have very limited use.

So I've seen this in the pesticide arena as being incredibly powerful, that if you find -- sometimes the chemicals that yield the most interesting information are those where they're only used, say, in building paint, or only used in one particular way, and if you can trace that pathway, if the chemistry is very, very different, perhaps that pathway doesn't work, but understanding that the existence of a pathway that might not be known is often revealed through a chemical that has very little other uses, so that you can distinguish the source more clearly, and that's something, I think, that both points at using the literature and also towards research, which we'll get to

next.

I would urge and just remind the department, which I think you're keenly aware of, that you have the authority to work on severes, and not just widespread impacts. So that is going to be an issue here. We're talking a lot about "widespread," but when we're talking about some of the exposure scenarios, they are going to be severe and not widespread.

In terms of prioritization methodologies, it seems to me one of the key parts of this is having good systemization of your data storage around chemicals, and I know that you guys have worked extensively on that, and will probably need to continue, and you shared with us this environment and climate change candidate prioritization system, which really boils down to an ongoing literature review and having a way of storing it for later assessment, and having a great set of questions for reviewing the literature, and that leads me to two things.

One is that I think it's exceedingly important that the department have the ability to have ongoing scientific literature review, so scientists being able to, at their desk, access all the journals, and I understand there have been some barriers to that.

I'm hoping that's resolved, but it's crucial that the department scientists have the ability to access

scientific literature directly, and that you have -- I would encourage you to establish a program where you've identified the major journals, and figure out who's tracking those, so that you can get stuff into your databases, because, personally, I have found that, and I've seen this in other places, as being just an incredibly powerful source.

It's usually not one paper that triggers something. It's papers over the period of five years that eventually tell the story about a chemical and a product, and so having the ability to store that, and then come back and look at it every so often, is going to be an important part of the toolkit for the department. Not having access to journals at the desk I've seen over and over again as being a huge barrier to scientific success, so efficiency, but also just information. So that's really big.

Then the last thing is that, every so often, there is a paper that's new that reveals something new that's major, and having some sort of common understanding among the scientists in your program as to what's a major new thing, that ought to trigger some discussion with management about it, is something that I think is a really good idea for you, because there's lots of things that are interesting, and they get press, but only a few things are really scientifically major in this area, and having that trigger, and then saying, "Okay. Based on this new thing

that just happened, that's major, let's go pull out our database for things related to that, and have a look at it to see if there's something that would change our priorities for our work going forward."

So those are a few thoughts. So now what I want to do, since we're beyond where we were supposed to be for our break, is there interest in follow-up discussion on anything here, or do folks have any add-on items? If it's just real brief, let's just do it, and then we'll go on a break.

PANEL MEMBER COHEN-HUBAL: And of course my mind is blanking on this, but you triggered something in terms of the literature review, and Carolyn Mattingly at NC State has the -- I'm blanking on the name of her on-line resource. Whatever. I'll figure it out. It's three letters, C-something, and she has added to that, so it has genes endpoints, tox endpoints, and chemicals, and she's added extensive curation of exposure literature.

So it's very high-level, doesn't tie to products or whatever, but it ties chemicals, and so then it infers connections where there's one in the literature, you know. So it's a really exciting resource. I haven't spent a lot of time to see how the exposure piece has, you know, sort of played out, but I was very involved in the early sort of development of that ontology. So that might be just

something in terms of the literature being curated and easily accessible.

PANEL CO-CHAIR MORAN: Any other quick follow-up? Is it fair to say that we've wrapped our discussion on the Work Plan? I think I see -- yes.

UNIDENTIFIED SPEAKER: (Indiscernible.)

PANEL CO-CHAIR MORAN: Yes. You're good?

DEPUTY DIRECTOR WILLIAMS: I mean, I could go either way.

PANEL CO-CHAIR MORAN: Okay. Well, I mean, if there's anything else you want, we could come back after the break and spend a couple more minutes on the Work Plan, or we could move into the research agenda.

DEPUTY DIRECTOR WILLIAMS: (Indiscernible) anything else.

PANEL CO-CHAIR MORAN: So Meredith is saying that, if anything thinks of something on the break, we'll come back after the break and ask for one last chance. If it's something that isn't going to be useful as a general thing, please feel free to communicate directly with staff. We can't talk to each other, but we can talk to the staff about it.

So let's take a 15-minute break, and so that would be, let's see, 12 after 11:00, and we'll come back and do a check-in on the Work Plan, and then proceed into the

research agenda.

(Off the record at 10:56 a.m.)

(On the record at 11:14 a.m.)

PANEL CO-CHAIR MORAN: All right. This is your 30-second warning. We're going to restart. All right. We're just about to reconvene.

All right. Welcome back to the Green Ribbon Science Panel meeting. Before we do a quick check-in on the Work Plan, and then move over, I'm going to turn things over to Art for the research agenda.

I want to point out that in your packets, panel members, there's a tab labeled "Agenda" that's actually not agenda, but it's about -- probably because that's how they -- at least, mine isn't -- that's about financial reimbursements, and there's a set of forms there.

So, if you want to have your travel costs reimbursed, which is provided for in the statute, then you need to fill out these forms and send them back to DTSC, and if you have questions about filling out the forms, Valerie's contact info is on the first page of that last section.

You also have an e-mail from Valerie in your in box, with examples of the completed forms that I hope will make it easier to fill them out. So, if you want your reimbursement, you've got to take the initiative and fill the forms out, and you have an envelope, but you will have

to provide the stamps in the back of your package to do that, and do follow the instructions carefully. The state travel people are really, really anal about this stuff, so get that right.

So, with that, are there any last thoughts on the work plan? And, hearing none, I think we'll turn this over to Art, and we'll tack the research agenda.

PANEL CO-CHAIR FONG: Thank you, Kelly. So Meredith is going to set up our discussion on the research agenda by explaining the importance of DTSC engaging with the research community, and setting up the question that DTSC has for the panel.

Meredith.

DEPUTY DIRECTOR WILLIAMS: Thank you, Art.

I don't know how many of you have had the pleasure of participating in any of the recent discussions about the emerging tools that are coming on line, be that predictive tox, the Tox21 effort. There was a big meeting a couple years ago, a year and a half ago, on the 25th anniversary of endocrine-disrupting science, and it's just very clear that things are changing very rapidly.

What I see happening is that people are looking at a lot of that emerging science and a lot of those emerging tools with the existing regulatory decision-making frameworks in mind, so taking these new tools and applying

them as the way everything else has been applied, and they're struggling to do that in some ways, but Safer Consumer Products is a very different place.

We have the opportunity to be precautionary. We are not necessarily taking action immediately for risk management or for the regulatory responses. It gives us some time, and, therefore, we have a degree of flexibility that a lot of other regulatory agencies don't have, and that gives us the opportunity to take advantage of some of these tools and new research sooner than some other organizations could, and I think that's a tremendous opportunity for us. At least once every half-hour, the phrase "data gap" comes up, and a lot of these tools are tools that could help with data gaps.

So the other thing I heard yesterday throughout the discussion were, there were places where just the bread and butter, not necessarily the new bells and whistle science is coming on line, but monitoring programs, increased ecological toxicology endpoint characterizations, things like that, some of those things need to be addressed, too.

So we aren't a huge source of funds. However, we are out there in the world, and we want researchers to know what our needs are in terms of decision making, and we'd like to start to talk to you about what you perceive as our

needs, and how you think we can best influence the conversation about what research priorities should be, and how to explain to researchers how they can link their work back to us, how results and tools can be translated into our decision-making framework.

So we wanted to open up that conversation. It's not a "one and done" conversation. I imagine we'll come back to it from time to time. But certainly I wanted to get a first pass of your perception about where we are and what we can do to really advance the research agenda, and incentivize researchers to keep us in mind as they do their work.

PANEL CO-CHAIR FONG: Thank you very much for setting up the conversation. So let's see. Actually, didn't we ask -- are there specific things on the this, the questions that you have up on the slide, that you would like us to key in on?

DEPUTY DIRECTOR WILLIAMS: So the idea for these questions was really to get your juices flowing. It wasn't to march through them, necessarily, and cover each one, because it is a broad topic, right? And so I think the points of insertion are important. Where is it that -- what's the mechanism by which we can help influence the research agenda? That would be the one question that I would say would be particularly interesting to hear from you

about.

PANEL CO-CHAIR FONG: All right. Thank you.

Actually, I was just reminded that, in fact, we do have a comment over the web. So it's a short comment.

So, Marcus, would you mind just, before we get into this discussion, take care of that, please.

MR. SIMPSON: Bear with me for a split second, Art, while I get the comment booted up. Thank you.

So, folks, this comment was submitted at the tail end of the comment period a while ago, and just before the panel convened for discussion. It was sent from an on-line audience member. Her name is Laura Rosenberger Haider, and the comment reads, "Priority to chemicals linked to cognitive/slash brain impairment." Thank you.

PANEL CO-CHAIR FONG: Marcus, thank you very much.

So we'll start our discussion on the research agenda. Let's go around the room, starting with Elaine.

PANEL MEMBER COHEN-HUBAL: Okay. Thank you. I had a couple thoughts, and I think -- so, you know, I just thought about this. I'm just going to end up saying the same thing that Meredith just said.

I saw kind of three goals, potential goals for research, and one would be filling data gaps, and not just filling data gaps, but facilitating access to information. So that's increasing transparency, and encouraging that

ingredients are listed, and things like that, but I see that as a research goal, supporting in-form substitution and avoiding unintended replacements and consequences across the board.

Then the third I thought about is in terms of proactive policy, and this is the point of the legislation, is to change the way manufacturers think about and do product development to support safer design, but then I think there's potential here also to change the way that regulators monitor for and ID problems, and so the couple research activities, you know, that I would like to just throw out as things that should be on the radar in terms of potential investments, but certainly looking for ways to access and encourage these kinds of activities, are the nontargeted analysis tools and suspect screening, you know, which is a subset of those, certainly in the water supply, to build out methods for proactive monitoring.

I know a lot of states are working in this area, and probably your state is, too, but there's a lot of power and potential here as we sort of all learn together about how to implement these methods and then really take advantage of what we can and should be learning from those methods, and how those would inform your priority selection of products and chemicals, and then, using those same kinds of tools, to get at what are the chemicals in products and

chemicals, and build out that database, and also be in a position to address the point made earlier about the fact that what's in products and what products are out there is such a moving target.

So, just sort of -- I mean, I guess I come from a world where we spend a lot of time and energy both in investment in terms of the tox testing and a lot of different tools for accessing existing -- at collating, making very accessible information that's out there on whatever chemicals and products are out there. So we've been working very hard on that, and those tools are more and more accessible, and increasing in power, and then, in terms of the bioprofiling and those kinds of tools, we've spent a lot of time on that.

So there's certainly -- I mean, I could go on and on about opportunities there, and things that the agency could take advantage of, but I think there's a lot of thinking and documents and opportunities around there. So I just wanted to throw out there other two because, for us, they're a little bit newer.

We're starting to really take advantage of both of these potential approaches for sort of figuring out where are there signals that we aren't going to see without sort of just going and looking, avoiding the whole "under the lamp post" biomonitoring kinds of approaches, and we're

starting to particularly see power where -- I mean, this is how the GenX was identified in the water bodies in North Carolina, and then it's also the approach that we've got -- if the paper isn't out, then it's coming out, but where these kinds of methodologies were used to look at 20 different products and just see what's in them that we might expect or might not expect. So that type of data is becoming available, and is going to be increasingly interesting to take advantage of.

PANEL CO-CHAIR FONG: Thank you, Elaine.

Ken.

PANEL MEMBER GEISER: Yes. So I'm going to here reference a paper that I think, Ann, you and Joel and others were a part of, that laid out, I thought, a really nice trajectory of research needs in advancing alternatives assessment, and rather than highlight it myself, if you feel comfortable, I would just pass this to you, in your time, to sort of -- if you would go through some of those issues.

PANEL MEMBER BLAKE: (Indiscernible.)

PANEL MEMBER GEISER: I can say a little bit about them, if you want to.

PANEL MEMBER BLAKE: (Indiscernible.)

PANEL MEMBER GEISER: Yes. Well, maybe what I -- here's a suggestion. When it gets to you, why don't you say something about it, and maybe I'll step in and sort of say a

few of the things I thought important from it, because I thought that was a really good review of some, but, in addition, then, I would just add a few that are just my thoughts about this.

One of them, and, obviously, this kind of comes from my own interests as well, and that is, in order to carry out the functions that are in the Safer Consumer Product reg, DTSC has been challenged to really take a look at chemicals in products, and, to the degree that you're developing capacity, to really identify chemicals in products, and to begin to build databases, or think about what databases you use and all.

To do that, I would really be pleased to see that the department really took a lead in really building -- and maybe this is cooperative among states. Maybe it's working with other research institutions, or working with other associations, business associations or whatever, to really build a robust chemicals-in-products inventory, a registry of some kind where we really are doing that.

Now, I know Jack has mentioned that, you know, using SmartLabel as a vehicle for this, but it's just -- I don't know what is the right way to do it, but it seems to me that it would be very helpful to you, but it would be very helpful to the rest of us if that were going on.

In terms of substantive area, I think, you know,

I've heard -- maybe this is a bow to Kelly, because she's so wonderful at reminding us, time and time again, of the great gaps in ECOTOX. I'm convinced, when I'm looking at stuff at this point, too, the weakest areas that I'm finding are in ECOTOX studies, and, given that the few species that have actually been studied at all just sort of tells us how much we don't know about so much, and the fact that we're using a few species to stand in for the entire animal kingdom is like -- I mean, you know, how did we get away with that?

So I really would encourage more research in this area. Whether that's a DTSC thing I don't know, but along with that, and because of California, it seems to me research on water contamination and water as another area that would be very useful to have more information on as well, and I'm thinking about things like, let me just say, mixtures and interactions in water, and complexities in the dynamics of water chemistry itself would be very interesting, it seems to me, to take up.

So what I'm not saying, and trying to be clear, I wouldn't do a lot of -- I don't think DTSC needs to do a lot of human toxicology work, and there are so many fabulous institutions that are doing this work, and, you know, unless there's really some very targeted and specific thing, I don't see that as an area that makes as much sense. But those are my thoughts. Thank you.

PANEL MEMBER LINARD: I think, as I look at the questions, I focus on how we can help DTSC do its job better. So one of the things which I've jotted down is "Get involved, network," things you're already doing. How do you do it without a lot of resource, i.e., money?

I think you've got a good start in the events we mentioned yesterday, the CTEC (phonetic) meeting here. That's a good way to get exposure without costing you an arm and a leg. SOT is another good way, if you can just get involved and be present and be seen. Those are really important things, I think, in order to let people know that you want their information. If people know you want their information, you're going to get it, and I think that's important when you're looking at ways to maximize the efficiency of your operation.

In terms of some other things, looking at other regulatory agencies, can you trust their information? And I look at ECA. We mentioned the European Chemicals Agency yesterday, but by law, by regulation in Europe, they're not allowed to give out and make public all the basic studies. They can give their conclusions, but the basic studies are subject to confidential business information.

Will you trust their analysis? What would it take for you to trust their analysis? And I don't know. I'm not that -- the same goes for cosmetic safety in Europe, the

SCCS, and I did get the acronym. It's the Scientific Committee on Consumer Safety, which evaluates all these ingredients that you've listed under the beauty and personal care segment. They give all the usage instructions, and, to be honest, we follow them, as well as the cosmetic ingredient review.

SCCS is a closed body, but, again, do you trust the results of their analyses? How much confidence do you have? So, if you can develop some ties with them, to say their do their job right -- I don't have those ties, but I know other people might. It is a government -- I think it's more of an advisory body to the European Union, but it's that type of thing.

Cosmetic ingredient review is -- all meetings are open to the public. All findings are published. So, again, you're free to attend the meeting in person. You're free to comment on any of the submissions for that particular area.

How to do things? I know, if you have a specific issue, invite, in my case, industry in to talk. We're happy to have a full-day session, public meeting. We can do that on a particular topic. I know I coordinated one some seven years ago now, six and a half years ago, on alternative assessments. I still use a lot of the presentations that industry gave at that one. We subsequently gave similar

ones to the Interstate Chemicals Clearinghouse.

So, again, these are things you can do without a whole lot of resource, but it gains a lot of traction, because you tell people that you're going to use their data. If you use their information, people are going to be -- they really want to -- they want to see their database being used, too. It's in their best interests to have you want it. So, I think, you know, just get the word out that this is stuff you're looking at.

Now, what does this program do that others -- and I know we've touched on it. Yes. We can talk about the hazards of a chemical. We can talk about the exposure assessment. But putting it into a product is something that you do that's unique. There aren't many other agencies, groups that are actually looking at that, the product safety itself, or the safety of that chemical in a product with a certain exposure.

So I think that's the uniqueness that you've got, and you can actually then command information, say, "We need some help on this." People are going to come. I can guarantee it. I mean, if you said, "I want a full day on something," I think you'd probably get quite a bit of cooperation.

The other group that I just want to mention quickly is -- I mean, people think fragrances are black-box

materials, but there is a research organization which is focused entirely on fragrance safety. The Research Institute for Fragrance Materials has some really good methodology for assessing the safety of a fragrance ingredient as it's being used, both human health and, more and more, the ecotox evaluations. So they may not have done every fragrance ingredient, but they do have some phenomenal methods in assessing safety.

Then, lastly, I know we got a report on ICVAM. If you look at alternatives to animal testing, I mean, again, it's an alternative assessment. It's being done globally, but also by EPA in the U.S., as well as ECVAM in Europe. This is very hot. There are bills being proposed in California and then federal to ban animal testing for a -- well, this is serious.

We want to do it, too, but we want to look at the next generation of risk assessment. How do you actually assess safety if you don't have animal testing available? EPA is at the forefront of looking at how we're going to do this in the future.

So I think, again, you can get involved and see what's coming down the road, but it's also -- as you say, you have a little bit more flexibility. You can actually say, "Let's do a pilot here," and test out some of your concepts, which another regulatory agency may not be able to

do.

PANEL CO-CHAIR FONG: Jack, thank you very much for those insightful comments.

Ann.

PANEL MEMBER BLAKE: Thank you. I'm going to echo and build on something that Jack said, and expand that to methodologies beyond data, and say that perhaps, you know, we've done pretty well through (indiscernible) as indicating -- signaling some data needs and methodology needs, but perhaps do that a little more intentionally, and engage with -- specific targeted engagement with people who are developing methods currently that are relevant to your regulatory scope.

So we've talked a lot about the gaps in ecotox, so engage with the people that are trying to develop the methodologies that fill in the gaps that we need, and then, more specifically, perhaps, exposure assessment around exposures, and workplace exposure sites, some of the ones we mentioned specific to the broad product categories in chemical exposures, where those simply don't exist. People have not done those. So, once again, I'm a broken record on the nail salon exposure, but we can talk about that further.

Ken, thanks for highlighting the alternatives assessment community of practice. I worked fairly hard to bring together a research agenda, and I couldn't quickly

find that paper, but we can send it to you.

DEPUTY DIRECTOR WILLIAMS: I'll just say that we don't need that paper, because it was referenced at the Environment Canada/Health Canada Science Committee meeting quite recently.

PANEL MEMBER BLAKE: Brilliant. Okay. Fabulous. And, of course, we had work groups in hazard exposure and decision, which is -- since I was focused on the decision side, I couldn't quickly remember what the other high points were, but, anyway, so that's available.

I would also say to continue to do some of the engagement that you already have on the alternative side. So we've talked about alternatives assessment methodologies, but, specifically, you've partnered with academia, such as the U.C. Berkeley Center for Green Chemistry, on specific solution-oriented things, and your support for that type of solution focus, the Green Solutions class -- I'm channeling Meg Schwarzman here, since she's not here -- and those types of approaches, those are the kinds of things that I think we need to scale, and DTSC signaling that this is an alternatives assessment approach that works, and one that you support. That helps enormously, so specific targeted engagement on all those areas, developing methodology.

One of the methodologies I was thinking of, also, is cytotoxicity for PFAS, which I was bringing up yesterday.

These methods are in development now, and one of the challenges they've had is they don't really have feedback from regulatory agencies about their needs. So I think that's a huge area that DTSC could provide, you know, "What do you need in terms of information to take action in your regulatory scope?"

Meredith is looking puzzled. Did you have a follow-up question?

DEPUTY DIRECTOR WILLIAMS: That's a case where it would be very helpful to have specifics.

PANEL MEMBER BLAKE: I can follow up with you on that.

DEPUTY DIRECTOR WILLIAMS: Who is "they"?

PANEL MEMBER BLAKE: Yes.

DEPUTY DIRECTOR WILLIAMS: Yes.

PANEL CO-CHAIR FONG: Thank you, Ann.

Julie.

PANEL MEMBER SCHOENUNG: Yes. Most of the things I had on my list have already been said as we're going around the table, but that's fine. I wanted to just say a couple things, focusing mostly on the AA alternatives assessment, and going back to some of the things yesterday, and issues with data, not just data gaps, but data quality.

You know, we talk a lot about data gaps, but even the data we do have is not always consistent, and how do we

deal with data that we do have that we don't necessarily have strong confidence in. It's sometimes almost harder than if there's just nothing there, right? So how do we address that, both in a pragmatic sense, if you're using it in AA -- you know, how would we manage that? How do we address it?

How do we identify that this data is less reliable than that data that we're using in an AA, but also how do we promote the development of databases that it's easier to tell how reliable it is, and how much evidence there is to support that data in preparing your own assessments or for outsiders doing AAs?

We mentioned many of these yesterday, but I'm going to say it again anyway, and that is, the things you already know you need to fill the gaps of is relevant factors, and how do we develop proper methods to identify and assess relevant methods? I'll speak for Helen, because she'll always bring up economic analysis, and she's not here, and the decision making.

I think that what is expected within an AA in terms of articulating how to make a decision we touched on yesterday, but I think it's really important that we have that conversation further in terms of, should it be quantitatively determined or should it be qualitatively determined? And I'm not sure if it's the same paper that is

being referenced here in terms of AA, but the workshop that Tim Malloy had organized at UCLA a few years ago -- is that the same one?

PANEL MEMBER GEISER: Different one.

PANEL MEMBER SCHOENUNG: This is a different one -- also came out with a paper that was a conversation that came out of all the workshops, breakout sessions, and a lot of those discussions were the tension, if you will, between the academics and the industry and the government people, between is it okay to just qualitatively, and from a judgment and values system perspective, be able to say, you know, "Given all of this data that we've collected, this is what we think is the best choice, and why," or do you actually need a rigorous weighting of attributes and weighting of relevant factors, and, if so, how do we decide what that should be? And, you know, as brought up yesterday, how do you account for that value system of the firm? Should it be systematized in some way?

So those are things that I think there's opportunity for those different sectors, industry, academics, and governmental organizations, to try to continue that conversation of "What is appropriate in the regulatory setting in terms of allowing for a good decision to be defined, and for uncertainty and data gaps to be incorporated within that decision-making process and the

value systems that everybody has?"

Then the other thing I'm going to bring up again, and Ken mentioned it yesterday, and we've had it come up many times over the years, and that is mixtures. I think there's still a big need out there for doing more research on "How do we account for the fact that there's virtually no data on anything beyond cast number, identifiable chemical, and when you put that together into mixtures, how can we do that?" And there's been efforts to do that, but I think that's a challenge that's out there.

If you want to broaden the range of chemical product combinations you want to look at, you're going to get to a point where it's not as you have in the current work plan, where they're pretty identifiable, well, say, mostly organic-based chemicals. If you start to look at engineering chemicals, engineering materials, they're not going to be in pure form, ever, and so dealing with that, and that also leads to when you get to even more complex systems, like electronics and solar panels and other systems, and machinery and things.

I know your priority products have moved away from that, and maybe they aren't the route of most widespread or acute exposure, but I would hope those wouldn't completely fall off the radar as things that could certainly use the motivation of a regulatory agency pushing those industries

as well to be paying attention to what chemicals and substances they're using in their products.

If we always just end up pushing, "Well, that's a complex material system. It's not actually going to get out into the environment. People aren't going to see it," I think that it sends the message that they're always going to be on the back burner and they're never going to get on the radar. So there's a couple both pedagogical or methodological things, but also pragmatic, in the industry and the firms. So, thank you.

PANEL CO-CHAIR FONG: Julie, thank you very much, especially for bringing up the issue of data quality. I love that. Thank you.

Becky.

PANEL MEMBER SUTTON: All right. So I have a couple different ideas, here. First would be exposure, and here I'm thinking this would -- I'm thinking of this broadly, so including the stuff Mark would talk about, but also thinking about indications of exposure such as presence of chemicals or metabolites in humans or in wildlife, so monitoring data.

Then Ken mentioned ecological toxicity, so I guess I don't have to go into that one. That's covered.

I also wanted to bring up again nontargeted analysis. Here this is a very useful newer method that can

help get to some of these unexpected contaminants, might help to identify unexpected things that aren't under the lamp post Elaine mentioned. It can also be useful for identifying chemical classes, which could get to the impurities or, you know, the mixture of pure industrial or chemical products. So I know DTSC is developing capabilities in this area, and harnessing those could be very useful.

Also, nontargeted analysis for high-confidence identifications involves spectral libraries, so developing those libraries is a great idea. In addition, you can sleuth through existing nontargeted analysis data using sort of automated means to try and figure out the identities of chemicals where you don't have a clear spectrum, and so encouraging those developments could be useful for just taking older or existing nontargeted analysis data sets and trying to identify stuff that's already present out in the environment, and then, finally, encouraging product testing, including as it's in use or in situ in the environment.

PANEL CO-CHAIR FONG: Thank you very much.

Mark.

PANEL MEMBER NICAS: And once my narrow world, both point of use and indoor air. Data on emission rates of the contaminants that are being sort of of concern would be certainly the biggest data gap, and certainly, then, what

requires research, and I think that a way to encourage the collection of that data that doesn't require money from DTSC would be -- well, really it would be, basically, publishing in peer-reviewed journals, not just posting on line, but publishing in peer-reviewed journals, examples of how emissionary data was used to a good effect in an alternative assessment or as part of an exposure assessment, as part of an alternative assessment, and then an example of how it wasn't so good, and maybe the consequences or the outcome would have been better had, you know, better data been used.

It doesn't just have to be published, you know, by the staff. There could be working relationships established with academics -- that's not including me -- where DTSC could provide the information that it had about the exposure assessments, and then the academic, in collaboration, could sort of write up the paper and have it published.

Why would an academic want to do that without getting any money? Because the more papers that are published in an area, the more likelihood they will get funding for research in that area, and I can tell you that academics are always looking for research funding.

So I think that there's a collaborative relationship, and, you know, it doesn't have to do with exposure, clearly. I mean, every area that you deal with

can have this collaborative relationship with academics.

Now, I'll tell you just a quick example of emissionary data. There was a product that was an ethylene oxide sterilizer meant for small offices, and it was basically a bread box, a ventilated bread box, and you would have a little ampule of ethylene oxide, and break it, and kind of throw it into a bag that contained the items that were meant to be sterilized.

Of course, you can imagine that the ethylene oxide gets out and goes into the room, and the company that marketed it had done some exposure monitoring, to their credit, but they had done it under a specific set of conditions, small room, high ventilation rate, and they repeated it six times, and what they got were exposure levels or room levels that were below regulatory limits.

So they advertised the product by saying, "Meets OSHA," you know, "There's no problem here," and what I did, you know, it wasn't rocket science -- although it was for me at the time -- was to basically tease out the emission rate data. They could have done it, but they didn't. All they did was monitor under one set of circumstances. But I teased out the emission rate data, and you could show that, under different use circumstances, really different ventilation conditions, that you could be above regulatory limits, and, in fact, it led to maybe one of the first

work-related Prop 65 cases.

So, I mean, it's an example of how emissionary data is more valuable, usually, then exposure monitoring data, because exposure conditions can vary quite a bit. So can emission rates, but maybe to a lesser extent.

So that's how I see, at present, DTSC could move forward emission research, is basically promoting the publication of peer-reviewed articles, and helping academics along in establishing that this stuff is useful to have.

PANEL CO-CHAIR FONG: All right. Thank you.

Mike.

PANEL MEMBER CARINGELLO: A lot of what I wanted to say has been touched on, so I apologize that there are some repeats, and some I've checked off, so I won't even talk.

One thing I wanted to mention is that, with major research areas and current funding, I think a key thing you have to do -- and this alludes to what Karl was talking about yesterday -- I really think that some of those funds need to go towards testing to verify that product that has gone through the process actually meets what people have said they were going to do, and not because you're being negative towards the stakeholders or you think people are lying, but because I think there are going to be cases like Karl was talking that there might be people that don't know

that those flame retardants are in those mattresses.

That's not only, necessarily, the funds to do the testing, but there might be research on your part to say, "How do we test these mattresses that are on the market to see if there were the flame retardants?" And I think that's a key part to moving the program forward, is saying, "This isn't just a paper exercise. This isn't just we're going to, you know, do an alternative assessment and walk away. This is, we're making sure that the program is up and providing the safety that it is expected to do." So I think that's a very key area.

I think, as you look at methods, you need to be very careful to make sure that they're both meaningful and cost-effective, because, if you're going to develop a method for someone to use, what you want to be able to do is convince the stakeholder that "If you do this method, it's not going to cost you, you know, more than you're going to ever make on the product, and it's going to give you a result that is truly meaningful in real-life conditions."

I think a lot of methods exist out there. You know, we were talking earlier about "Okay. They test one animal, and that's supposed to encompass everything." How do we -- what research could be done to say, "Okay. Is there a method where we can take an in vivo method and then turn it into in vitro, and then into modeling, so it's much

more broadband, on an economically doable basis?" I think that's where you can make the bigger impact, is instead of doing research yourself, but helping people define models to get better sort of test methods.

I think -- and this alludes to what Becky was saying, in a way -- if there could be research into the actual emissions from these products, so that, as we go back and say, "Here's what our priorities are," we're looking, and say, "Okay. While our priority is -- while we're looking at the aquatic environment, is it really getting to the aquatic environment, or are just assuming that it could? If we could have test methodology that says, "Here's how you can show that it's being kept away from the aquatic environment," that's as good as saying it's safe in the aquatic environment.

So that might be another area of research, and then I'd also encourage -- and this kind of goes back to cost viability, long-range, is, as methods are developed, if you could partner with someone like OECD, where, if people run the test to fill some of the data gaps with our AAs here, that we could turn around and use those on a global basis, because they would be acceptable in all OECD countries.

PANEL CO-CHAIR FONG: Thanks very much, Mike.

Kelly.

PANEL CO-CHAIR MORAN: Thank you. I'm going to start with about influencing the research agenda, and then talk about some specific ideas.

I've had some success with this in the past. I've staffed a joint effort between the water boards and municipalities to try to address pesticide water pollution, and we have zero research dollars, zero, and we've actually been able to, by identifying priorities, stimulate quite a bit of data to come to in former efforts. It's been really, really a very interesting example.

Presentation to audiences at scientific conferences has been a key tool for that. Journal articles are always useful, harder and more labor-intensive to achieve. Sometimes journals have places for non-scientific articles.

Elaine has mentioned that, the introductory pieces in her journal, SETAC journal, *Environmental Toxicology and Chemistry*, has a place for broader-perspective pieces that would be perfect for laying out the relevant parts of some kind of agenda here. So those articles are not as intensive as doing a full scientific paper. You don't have to create new research. You can tell a story, and say, "Here are some objectives that we have," and really communicate it out. I still think on your web site is always useful.

A key thing is to, through that networking, let

people know that, when they're applying for grants on something that's a priority for you -- you know, if you can send support letters for those grants, it makes a huge difference in the success of that, to have the State of California Department of Toxic Substances Control say, "Hey. This is a priority for us, and here's somebody doing a grant that will do that." So there's ways of doing things that are short of actually paying for the research, and I know everyone is keenly aware of the funding limitations here.

On to some specific things. For me, one of the biggest gaps that I've noticed since the beginning of this process, when you were writing the regulations, is that there aren't authoritative lists for nonhuman health hazard priorities. You know, we have the 303D list from the Clean Water Act, and not much else to point to in that area.

I think that it would not be particularly difficult, but it would be very interesting to see academics tackle this question with regard to aquatic and other kinds of organism classes. So aquatics is the easiest one to start with, but birds, amphibians, plants, so thinking about particularly organism types that won't be protected by the mammalian focus we have on humans.

You know, for example, someone could create a list of chemicals that have acute or chronic toxicity in aquatic organisms at a concentration below 100 nanograms per liter,

and that would be a really interesting set of chemicals, you know, based on available data and so forth.

A lot of these authoritative lists started by somebody first going out, some academic going out, and creating a list, and then it would get traction, and maybe another group would create a slightly different focus on the list, and eventually a government agency might pick up that concept. So I'm not seeing that that would happen tomorrow and move immediately into a regulatory list, but more that it would help us start to organize our thinking.

The other reason that's important, particularly when you look at endpoints that are less tested, like birds, so the avian toxicity, trying to just gather together chemicals is an earlier step towards development of ecotox methods. You know, is there anything we can learn about the kinds of chemicals that area associated with harm to classes of organisms? That's how we're going to work towards being able to use predictive methods, because we are moving away from animal testing.

You know, nobody is testing birds on a widespread basis, because no one wants to kill birds. You know, killing aquatic invertebrates is still okay, but killing birds is not. It's just not societally acceptable. So we don't do those testings, and that's part of why we don't have those data. So we have to figure out what's our way of

getting past that gap.

So having some sort of list of chemicals that are harmful to nonhuman organisms is something that -- it's a low-cost thing, and it's something that would be super, super exciting to see folks start to do.

The second one is developing better monitoring data. I'm going to focus in on aquatic monitoring data, surface water monitoring data, for chemicals on DTSC's list. There's a lot of hunger to do monitoring, and a lot of lack of focus on what chemicals to monitor. I find, in particularly emerging contaminants monitoring and other monitoring programs, people are always looking for "What chemicals should I do?"

So a first step on that would be to perhaps do a review of the chemicals list, focusing in on which chemicals have the greatest aquatic toxicity and which ones have use patterns that are outdoors. You know, what do we know about that? Can we come up with a list of 20, 30, 50 chemicals that seem like they would be particularly interesting to have monitoring data in surface water?

That's an exercise -- I have done that for pesticides, where the data are a little more rich, so it's easier to do and can be done for thousands and not tens of thousands of dollars. So it would be a more complicated exercise with the chemicals list, but once you have any kind

of list, with any basis whatsoever, then you can ask the question, "Are there chemical analysis methods out there?," and encourage people to develop those methods.

If people know it's interesting to monitor for that chemical, they're much more likely to develop the chemical analysis method, and then it's possible to encourage people to actually do that monitoring. So, for example, the USGS National Water Quality Assessment Program, I've stayed in close contact with them over the years over pesticides.

So, through my work, I've identified pesticides that I think are the next one to pollute water, and have been able to tell them, "Hey. We really need methods with pyrethroids. We really need methods with fipronil. We need methods for indoxacarb." And they knew that.

They had a few years, and they developed those, and added them to their suite of methods, and now we're getting monitoring data nationwide. They have the capacity to measure other kinds of chemicals, and particularly if they know there's an agency that has a need or there's a public policy question.

So, you know, right now isn't the best time to suggest a whole lot of new work for NAWQA, but this is a long-term thing, and they do really powerful and amazing monitoring, you know, probably more than anybody else, but

also signaling out there for wastewater monitoring, for our water boards' monitoring. That's really important.

Another thing we can do in that area is, when your research identifies a candidate chemical that doesn't have very many uses, but that is used in a way like outdoors and buildings, or uses directly in water, that doesn't have a lot of uses, those are really good candidates for monitoring, so looking for that in the literature and seek to prove that link.

I really strongly encourage DTSC to start a conversation with the water boards over monitoring programs, and the needs for priorities for types of data that would be useful. DPR and the water boards have been doing this for a while, and DPR has restructured its surface water monitoring programs as a result, and it's learned about how those data are useful.

Now the water board is looking at restructuring permethrin monitoring programs, is working towards that for urban runoff and integrating that with the DPR programs and its own swamp program. So I see that potential happening through the example of pesticides, and think that that's something that DTSC is probably at the point in its regulatory program development to be ready to start that conversation with the water boards.

We really need -- so that's all related to

monitoring data, basically some steps and ideas. The third area is true source identification. So we know there's a chemical that we care about. We know it appears in the environment, and we don't have a lot of linkage information. There is some use information out there.

We've talked about data sources and data mining and so forth, but very few chemicals have had people actually sit down and using engineering estimation methods and scientific literature to go back and figure out what those sources are.

So I've personally worked on copper and zinc and a slew of other chemicals. Actually, I'm looking at wastewater specifically and trying to get some estimates, and sometimes you can do really well, and sometimes you can't.

The methods out there are -- there's a lot of really, really, crummy work, and there's only a little bit of work that's really scientifically robust in this area, where people are actually using the scientific literature and engineering estimation, not that involve, you know, assessment of uncertainty and bracketing the range of potential contributing sizes, and there's only a few people I know who do this.

Part of the reason this is important is that, if those methods are well developed and published into the

literature, I think we'll get more, better studies, but there's basically nothing that's been published in journals that's really good in this area.

I'm sorry to be so negative, but I'm super frustrated with the quality of what I see. People see something on a shelf and talk about it as "the main source of this," and there's just so much garbage in this area.

So source identification, true source identification, and really just starting with the literature, and that actually helps identify the gaps and needs for more specific studies, some of the kinds of measurements that other folks have talked about.

Then the fourth area I think we've all hit on, addressing the data gaps and uncertainty in ecotoxicity, you know, what can we do to do that as we're approaching AAs? And there I see a multi-step thing. I think there are some very specific short-term improvements that can be made to common tools.

There's already improvements being made by Green Screen, Safer Choice, you know, the common tools, Scivera (phonetic), other common tools that are out there. I think there are some things -- I've made lists of those and shared them in the past -- that could be done to already make things better, based on available information.

I do think there's a need to make sure that the

databases that are out there are really fully accessible. The EPA ECOTOX database is the main database source, but it's better coverage in aquatic toxins and some other areas, and so I'm not sure if everything that we really need is really assembled well in databases. There certainly need to expand (sic) and improve predictive ecotoxicology, and I think EPA has invested a lot of that when it comes to aquatic tox, but not any of the other areas.

Then, again using that same thing about chemical priorities, you know, really looking at the candidate chemicals list and seeing which ones are the ones that are most important in terms of exposure potential, we're seeing a lot, in a lot of different areas.

We should be encouraging very specific and targeted testing, particularly for aquatic organisms, on some chemicals, and we tend to come to the same chemicals and say, "Well, they're out there, but we don't know what they mean," but there's nobody actually making a list and signaling, "Gee. We really need data on these chemicals."

This is another thing where I've been amazingly successful, just by going out there and saying, "These chemicals are out there, and we know they're going to be out there, and we've got some pretty serious data gaps, so we don't know if they matter." Scientists will say, "Gee. I'll find this little bit of funding, and cobble together

this other bit of funding, and publish a paper."

So those are my four, and I also want to give my great thanks for having this topic on the agenda.

PANEL CO-CHAIR FONG: Kelly, thank you very much for sharing your experience and expertise with the panel and with DTSC.

So the only thing I want to touch on, it's perhaps providing some comment on how DTSC can maximize its influence on the research agenda, given its very limited resources. I think perhaps DTSC can take full advantage of the fact that the Safe Consumer Products Program is just so recognized around the world as being a trailblazer in green chemistry regulations. So that comes up a lot when I talk to different trade associations and public/private-type, you know, research organizations. So I think that's something that you can really take advantage of, so let me give you a very specific example.

So I don't know if the Dutch government has contacted DTSC, but the Dutch government is actually seeking help to help them set research directions on safe designs of chemicals, materials, and products, and finding alternatives for hazardous chemicals in products.

So, again, when I've spoken to, you know, different government agencies and industry associations, everybody just references the fact that your program is a

trailblazer, and it's doing something that other regulations are not. So I think there's a lot of interest and recognition out there about what's going on here. So I think, if you try to take full advantage of that, it's going to lead to more collaboration that's not resource-intensive.

In terms of, you know, how to, I guess, sell why collaboration is good, I think, if you can somehow talk about how you can add value to public/private research and development, the importance of what you're doing in terms of helping and supporting global competitiveness, I think that sells really well, and if you can actually also touch on the issue of green economy, I think that also helps in terms of selling, you know, collaboration, because the idea, you know, when the Green Chemistry Initiative first came out, was that there would be, you know, a lot of creating momentum to create a green economy and green jobs, and that hasn't really happened as much as people had hoped. So I think, if you were to emphasize how you can actually make that happen, that would also sell this collaboration.

Let me just ask if there are additional comments about DTSC's research agenda, and I'll start with Elaine.

PANEL MEMBER COHEN-HUBAL: Thank you. I think people's ideas were really -- you know, stimulated my thinking, so just a couple little additional things to kind of throw out. I did not raise these two possible tools in

terms of prioritization, because I still think they're on the research sort of side of the house, and I know the quantitative structure use relationships -- you're familiar with that paper, and the tool and model that ORD is developing in that area, but I think that's something that has potential to start being used in your prioritization of product chemical combinations.

So we talked about this yesterday, and sort of fell off my mind today, but in terms of transformations in environmental systems, particularly aquatic systems, we do have a chemical transformation simulator, and so exactly which transformation, you know, what the library is right now that's in there, and how -- it's certainly publicly available. It's not easily accessible. So we would have to just -- all you have to do is talk to the developers in our lab.

Two, driving which libraries they add and which, you know, things -- I think there's potential there for you to both access and use the tool, but then, also, potentially inform sort of what are the next kind of priority areas that they might want to focus on in their development.

On the product testing, sort of on the end side of your program, I do think there are -- we're certainly working on methods. Again, I mentioned a particular paper that's, I think, published or just barely there, but having

rapid -- you know, the rapid ability to just grind up a product and rapidly screen it, it becomes more powerful when you're looking for something specific, right, because the criticism of using that method on the side of trying to figure out what might be in there, and why it might be a problem, is criticized because, well, we don't really know that it would come out of the matrix and be an issue, right? But you've already identified something that was supposed to be eliminated, so it's a perfect screen, you know, after the fact, and very affordable, right? So that kind of thing could be built in.

Then, just on the emission rates, I thought there was a really -- so I'm actually working with somebody in Virginia Tech who, you know, is an expert in this area and approached me because, again, of the rapid chemical safety kinds of things we do, and I did flip it and say, "Well, you are aware of the DTSC program, aren't you?" And, of course, he wasn't.

So I do think that this is -- I'm taking this away as something, you know, that is a research priority, and that there's possibilities, too, that, you know, we could identify somebody on your team who should be a coauthor on sort of -- right now, I think it's kind of a scooping review type of paper, but I think there's -- like, I know that, on this panel, a lot of us are hearing these things, and where

maybe your group doesn't have the bandwidth to do their own papers on all kinds of things, it would be interesting to start doing more kind of joint authorship on some things that we all know are really important.

PANEL CO-CHAIR FONG: Ann.

PANEL MEMBER BLAKE: I just wanted to respond to Meredith's request earlier for specific contact, and since you brought up the Dutch government, I will say that folks that are working on the BPA and PFAS test methods are led by Anne Marie Vinggaard at the National Technical University of Denmark Food Institute, and I know that someone on your staff is already somewhat aware of that, but, you know, they're developing, I think, some nontargeted analysis in spectral libraries around that, too.

PANEL CO-CHAIR FONG: Thank you.

Jack.

PANEL MEMBER LINARD: I alluded to this earlier, but a number of companies, many companies, actually supported the original Green Chemistry Initiative, including mine. I wrote our note of support, so I know we did. We have a vested interest in making it work. So it's not an adversarial relationship. It's one where we want to make sure that, when we say we support it, we want to support it, and we want to make it work.

So, again, don't hesitate to bring us into the

fold. That's why I'm here. That's why Mike is here. So it's not that, you know, you're regulating -- we actually want to make it work, too, because it's all going to benefit all of us. So I just think -- you know, just want to make that clear, that we supported it. We still do. We want to see it work.

PANEL CO-CHAIR FONG: Great. I think that's a really good comment to end on, unless there -- I just want to emphasize, again, this is just the beginning of a long-term conversation, but I think we're off to a really good start, and at this point, I'm going to turn the mike over to my co-chair, Kelly, who is going to help us wrap up this meeting.

PANEL CO-CHAIR MORAN: All right. Thank you very much. So first, just in summary, I think today you all provided some really good discussion and input on the work plan, but I think the panel pretty well concluded that the work plan is solid. It's scientifically sound in its basis, so that's one of our jobs that we should be doing.

We did highlight a few things, particularly the worker safety issue, that the department is going to be pondering coming up, and we also just heard some very robust set of ideas to see the department's thinking through of research agendas.

I was hoping that we'd be able to do some sort of

prioritization, but I think there were so many good thoughts here that that probably is beyond the scope, but perhaps something the department will consider and, if they want to bring back to us, that we would have future conversations about. There's so many different things that fall into different pieces with different potential partners, that it's okay to have a multi-faceted agenda, in any case.

More importantly, it's sort of bigger picture. At the beginning of the meeting, I reviewed our charge from the legislature, and I just want to thank you all, because I think we are continuing down the course that they set for us, to talk about issues, you know, big and small, really ask questions about the science and policy issues around the program, you know, keep encouraging the staff to stick with the course of developing a solid, scientifically strong regulatory program.

We all lament that there isn't more money, and more staff, and, you know, more resources to do a lot of these things. I think that's an underpinning of the whole conversation here. So I do feel obligated to mention that. This is a tiny program that's -- it's like, you know, the mouse changing the world, and it is really doing that. I think it would have more capacity in a lot of different ways if there were more funds available, including funds for research program and more staff and so on, but that's

neither here nor there. It's just something that's out there.

So I think that's really important, and I just want to check in. I think that folks are -- what I'm hearing in all of this discussion is a lot of support for the way the program is going. I've never heard anyone utter any major concerns about science or the basis for this work. So that's important for us to check in on regularly. The DTSC Independent Review Panel and the legislature are asking us these kinds of questions, and a subset of us have represented the panel in those settings.

So I do want to make sure that panelists recognize that it is important for us to continue to think those things through. If you do ever have concerns, your first phone call should be to Meredith, but if any way you're dissatisfied with stuff, as your co-chairs, Art and I are appropriate folks to contact, so that we can work with Meredith. But I think everyone has a pretty open door with Meredith, and I certainly hope that you will continue with that. But, not hearing any concerns, I don't think that's a big thing at the moment.

I'm not sure -- I don't think there's any other wrap-up stuff. So you know about your logistics, and I'm going to start, and then I'll let everyone else here follow up, by thanking each and every one of the panelists for your

time, the thoughtful preparation work that you did, the experiences that you've individually brought to this, and your strong and longtime support for DTSC. That's really incredible.

Then I also want to thank all of the staff in the program. This is a really small program that's really doing a lot, and each of your individual contributions is what makes this successful. So it's individual parts. It's teamwork.

I want to thank the support staff for the meeting, and everyone up and down there. This has been, I think, a really smooth-flowing meeting, and very convenient to be a panelist, because of all the support.

I want to thank the partners and stakeholders for taking the time to listen in, and also provide your input through all the separate processes, because I can hear how that matters in the policy perspective, and how much information is being shared with the department, which is just crucial to its success.

So I'll pass it to Art and Meredith.

PANEL CO-CHAIR FONG: Nothing to add. Just, great job, you guys.

DEPUTY DIRECTOR WILLIAMS: So we're now showing a slide of our parking lot issues. Is there more than one slide? Yes. So I'm not going to read all the ones. I'm

just going to give you a second to take a look at those, maybe a minute on this slide and then a minute on the next one. Okay. Could we see the next slide, please? Anything else? Is that the last one, Baoku? No. Thank you.

I think, again, the fact that we got recommendations that were so clear and actionable and thoughtful, and aligned with what we're trying to do, is very, very helpful and valuable. I want to echo all the thanks that Kelly gave. I do want to thank the operations and admin support, Baoku Her, Valerie Ruvalcaba, because I know a lot of you interact with her, Debra Lynn-Shimasaki, and Heather Kessler for a lot of the administrative support, in particular.

I also want to highlight the work of Diana Phelps and Anne Cooper Doherty. Anne Cooper took on this role on top of some other very significant responsibilities, and really was pivotal in shaping this meeting, and working with Art and Kelly to hone the topics and ensure that we could have some thoughtful discussion. So I really want to thank you, Anne Cooper, for all of that work.

The staff who presented were representatives of the great staff that we have, and they're pretty great representatives, and I do think they do represent the depth and the breadth of the talent we have, and their commitment to the work, and the excellence that they bring to the work

every day.

So I couldn't be more privileged to work with them, and I couldn't be more privileged to work with you. I know you mostly know my back story, but, every now and then, I just still have to pinch myself that I've been given the opportunity to do this work, and this last couple days was no less amazing in terms of realizing -- you know, we have been very "nose to the grindstone," and to hear you all saying repeatedly that we are having an influence out in the world is -- I constantly tell staff that I'm the one who gets to go out into the world and see that, but hearing it from you is a different matter, and we really appreciate your bringing that back to us.

Going back to the metaphor, the fish metaphor, of going from fingerlings to juveniles to fully grown steelhead that are strong enough to make it through, you know, the pools and the ripples and the rapids, and get upstream and continue to spawn, I to think that we are getting there, and I do think that that's very much a tribute to this committee and the work of the panel in terms of not just advising us, not just cheerleading us, but also challenging us, challenging us to take on more, to do more, to realize the potential of these regulations, and so I think you for that, also.

So it's been a really great couple of days for us,

and I hope it has been for you, too.

PANEL MEMBER BLAKE: Can we also say thank you to our co-chairs for keeping us in line, keeping us focused, and moving us forward.

DEPUTY DIRECTOR WILLIAMS: Yes.

PANEL MEMBER BLAKE: Thank you, Art and Kelly.

DEPUTY DIRECTOR WILLIAMS: Once again. And, again, we rely on them for not just the meeting, but in terms of the multiple, multiple calls we have to try to shape the discussion. You're always so thoughtful, and, again, challenging, but encouraging. So you must have been great parents.

PANEL CO-CHAIR MORAN: Well, thank you all. This meeting is adjourned.

(Thereupon, the Meeting was adjourned at 12:27 p.m.)

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